

COMPUTER HORIZONS

23/01
Book 3



Fundamentals

Logo



Windows

Worksheet

Internet

Paint



S. Addy

ACES Infotech Pvt. Ltd.

23/Gift

Computer Horizons

Book-3

SUBHASHISH ADDY



ACES Infotech Private Limited.

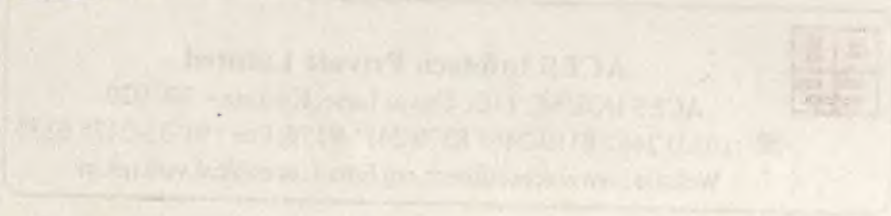
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PREFACE

The subject of computers is approached with a feeling of excitement , awe, fascination and intimidation. In business, industry and scientific research the computer is an essential tool, and as time goes by, they have an increasingly familiar place in everybody's lives; at home, in school and at work.

This book deals in a straight forward way with an initial look at the wonder machine,a look at the input,output and storage devices, important aspects of computer and its accessories, a visit to the LOGO land, starting off with Windows and a first, fresh look at Paint, Worksheet and Internet.

Although this book is meant for pupils for class III, as a follow up of the text written for elementary classes, it could also be treated as an independent text, and general readers will also find it useful.

Happy computing!

Subhashish Addy

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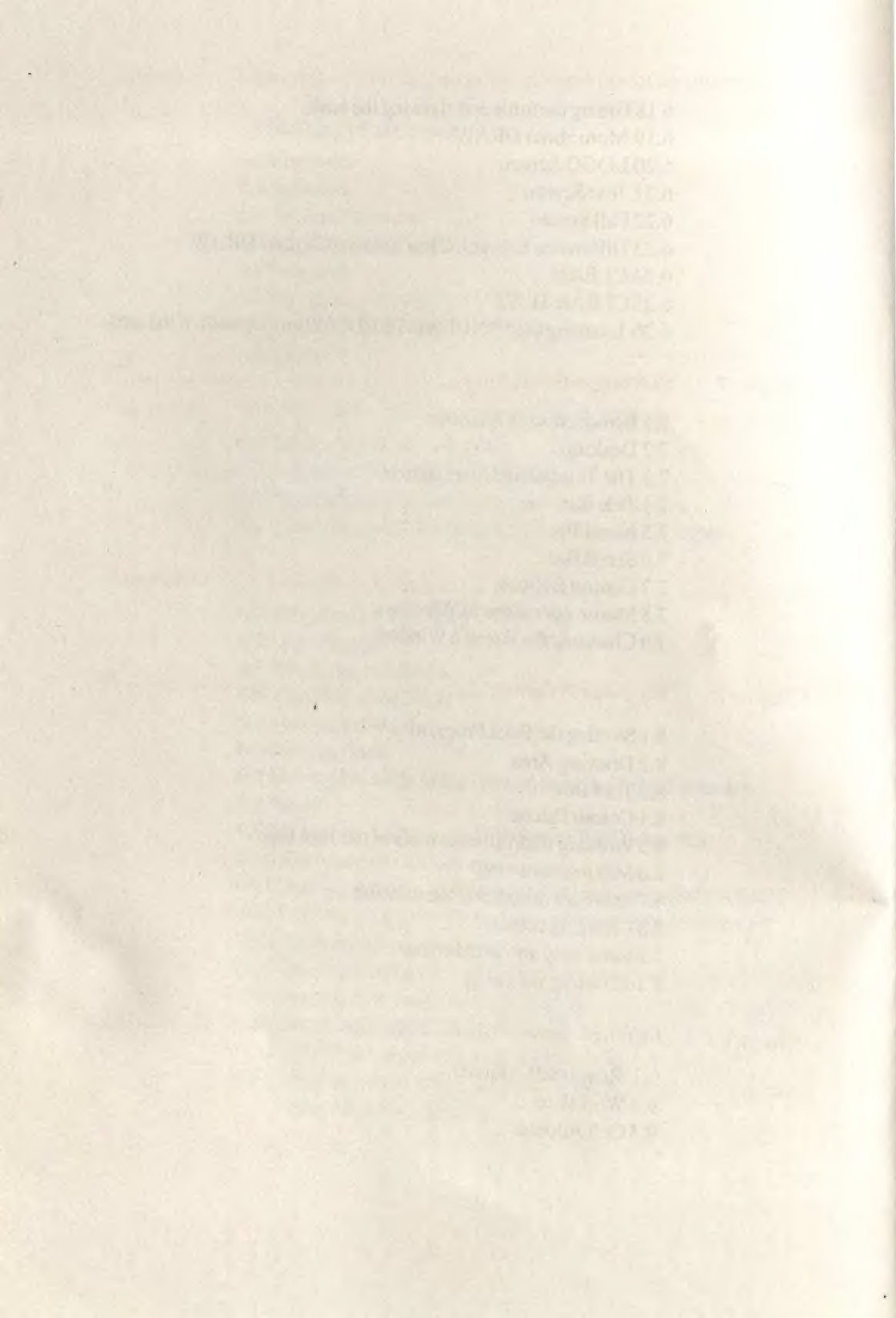
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CHAPTER 1

Look at my computer



We will learn about



Definition of a computer



Advantages of using a computer



Uses of Computers



Computers in our daily life

1.1 What is a computer ?

A computer is an electronic device which can calculate, process and compare data to give desired results and store them for future use.

1.2 Advantages of using a computer

A computer has a lot of advantages which are as follows:

1. Accuracy

2. Speed

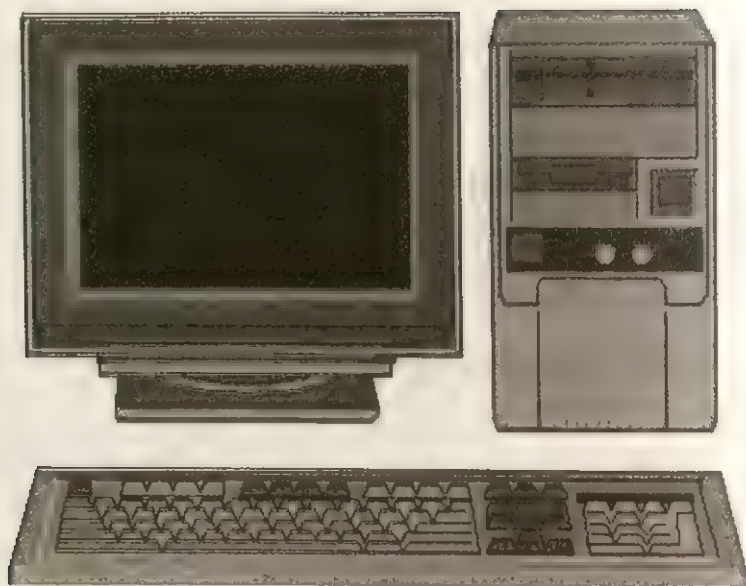
3. Tirelessness

4. Storage

5. Automation

6. Versatility





Accuracy

A computer never makes mistakes and gives accurate results. Only if the user makes mistakes while operating, the computer may give wrong results.

Speed

A computer is an electronic device in which electrical signals travel at a very high speed. Computer does its jobs very fast. Unlike human beings it never slows down and keeps working at a uniform speed.

Tirelessness

The computer never gets tired or bored if it has to do the job repeatedly. Even if it has to do a million calculations, it will do the last one with the same speed and accuracy as the first one.

Storage

A computer's systems unit is capable of storing a large amount of data in its memory. It can also reproduce the same data for infinite times if demanded by a user. A human brain can never do that.



Automation

Once the instructions have been given, a computer can carry out its job automatically till it is complete.

Versatility

A computer is capable of performing a large number of different jobs working logically step by step.

1.3 Uses of Computers

Computers are used for doing a lot of things. We will mention a few of them :

- i. Computers are used for doing small or large calculations
- ii. Computers are used for typing documents.
- iii. Computers are used for drawing pictures.
- iv. Computers are used for playing games.
- v. Computers are used for storing data.
- vi. Computers are used for listening to music.
- vii. Computers are used for sending e-mail.

1.4 Where do you find computers in our daily life?











- i. Schools
- ii. Railway Stations
- iii. Hospitals
- iv. Offices
- v. Airports
- vi. Hotels
- vii. Shopping Centres
- viii. Homes
- ix. Cyber Cafe
- x. Banks

CHAPTER 2

Inside the computer



We will learn about

-  Data and Information
-  Input, Processing, Output in our daily lives
-  Input to a computer
-  Processing inside a computer
-  Output from a computer
-  Central Processing Unit
-  Arithmetic and Logic Unit
-  Control Unit
-  Memory Unit
-  System Unit as we see



2.1 Data and Information

Before we start learning about input, processing and output which form the most vital exercise of working in a computer there are a few term and facts which you should be acquainted with.

Remember :

Computers work with Data.

What is Data ?

The word "Data" implies a fact or collection of facts which on its own may or may not have any meaning.

Anita, 11, Dover Lane, Class V, 85%, Ms. John..... Does this data make any sense?

Suppose we put in the above data into a computer and receive from it the following information :

Anita is 11 years old, lives in Dover Lane and is studying in class V. She got 85% marks and her teacher is Ms. John.

The above lines are meaningful information. Remember, data implies facts or raw materials which themselves may have an unclear meaning.

See how meaningfully the previous data has been arranged and we know exactly what it means.

We may see information as a collection of data in an organized manner to get the desired result.

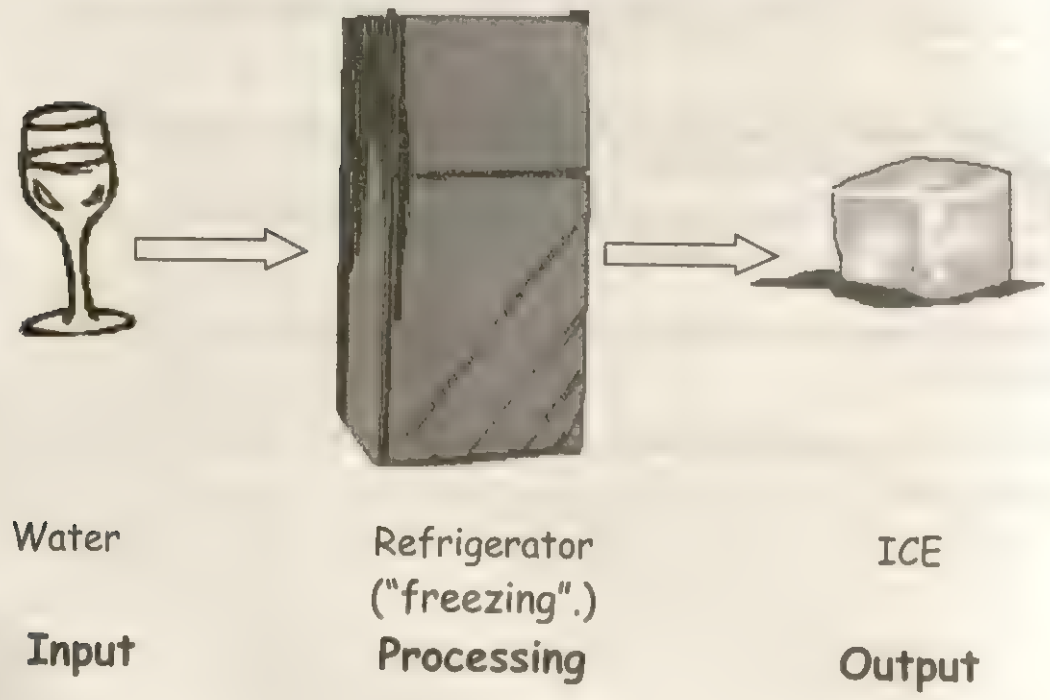


2.2 Input, Processing, Output in our daily lifes

Whenever we put water in a freezer we get ice. The water put into the container is the INPUT, ice is the OUTPUT and the process of conversion from water to ice in the refrigerator through the method of "freezing" may be termed as PROCESSING.

Similarly when we put on the switch, the bulb glows and we get light. In this case the electricity sent through the switch is the INPUT, the glowing of the light is the OUTPUT and the method through which electricity makes the filaments of the bulb glow is thePROCESS.

Thus, whatever is sent in, is the INPUT and whatever comes out, is the OUTPUT.

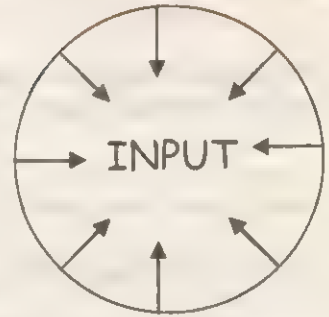


2.3 Input to a computer

While dealing with the computers, the word input implies whatever data which is put (or fed) into the computer for processing. In a computer we input words, numbers and pictures in raw format.

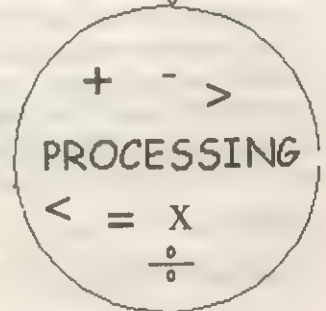
Input includes two things :

- The data which we put in the computer.
- The instructions which we give to work on data.



2.4 Processing inside a computer

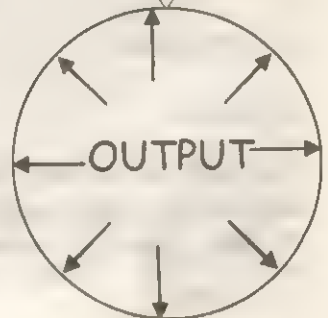
Processing refers to working on data (input) according to specific instructions and converting it into desired meaningful information.



2.5 Output from a computer

The organized information which we obtain from a computer after processing is called OUTPUT.

Output can be words, numbers or pictures in a processed form.



2.6 Central Processing Unit

The Central Processing Unit is popularly known as the CPU. CPU may be thought to be the brain of the computer.

It performs the basic arithmetic and logic functions and controls the overall functioning of the system.

CPU consists of two parts:

- (i) Arithmetic and Logic Unit (ALU)
- (ii) Control Unit (CU)

2.7 Arithmetic and Logic Unit

The short term of Arithmetic and Logic Unit is ALU. The ALU performs arithmetic operations such as addition(+), subtraction(-), multiplication(*) and division(/). The ALU also performs logical operations i.e. it can compare. For e.g. whether a number is smaller than or greater than another number is found by the ALU. Say whether the number 97 is smaller or bigger than 51 is found out by the ALU by comparing the two data and giving a final result.

We will now learn about various arithmetical operators, logical operators and their symbols.

Arithmetical Operators :

<u>Operator</u>	<u>Symbol</u>
1. Addition	+
2. Subtraction	-
3. Multiplication	*
4. Division	/

[We will notice that for multiplication an Asterisk symbol " *" is used instead of conventional "x" sign which resembles X of the alphabet and for division operator, front slash "/" is used instead of conventional division

$\frac{\square}{\square}$ sign .]



Logical Operators :

<u>Operator</u>	<u>Symbol</u>
Greater than	>
Less than	<
Equal to	=
Not equal to	<>
Greater than equal to	>=
Less than equal to	<=

2.8 Control Unit (CU)

The short form of Control Unit is C.U. The Control Unit controls the operations of all the parts of a computer. The Control Unit also looks after executing of all programs. It receives program instruction from memory and executes them one after another. It also controls the flow of data from various input devices like keyboard, mouse etc. to the memory and from memory to various output devices like printer, monitor etc.

2.9 Memory Unit

How do we remember things?

We have memory. We use our memory to store information. A Computer has memory too. A computer remembers data by storing them. A computer can store large amounts of data. One of the main characteristic of the computer is its storage capacity. The storing device of a computer is known as its Memory.

Memory is used to store information. The information may be the names of the students of your school, their marks etc. The computer also stores huge programs and data in its memory.

We can also change the information in the computer by deleting old information and data and putting in new ones.

Memory is again classified into two types

a) Internal Memory

b) External Memory

The internal memory is further divided into RAM and ROM

RAM stands for Random Access Memory.

ROM stands for Read Only Memory.

RAM (Random Access Memory)

The data stored in this memory can be accessed randomly. We can both read the data from the memory or can write data in the memory space. But this memory is dependant on power supply which means all the data will be erased once the power supply goes off. This is why RAM is also known as volatile memory.



ROM (Read Only Memory)

As soon as we switch on the computer, all the devices including memory is checked by ROM. The information stored in the ROM is permanent and does not go off even if there is no power in the computer.

Let us find the unit of measurement of memory.

1 character = 8 bits

4 bits = 1 Nibble

8 bits = 1 Byte

1024 bytes = 1 Kilobyte

1024 Kilobytes = 1 Megabyte

1024 Megabytes = 1 Gigabyte

As we have already mentioned the disadvantage of the main memory lies in the fact that the information in the computer's memory gets wiped off as soon as we switch off the computer. This problem is solved with the help of a secondary memory. Along with the main memory the computer has a secondary memory to store information permanently. The information stored in the secondary memory can be used as many times as we want.

The various storage devices are used as secondary memory. The Floppy disk and Hard Disk are two important storage devices.

[We will discuss about each of them in the next chapter.]

2.10 System Unit as we see it

The Central Processing Unit, the Control Unit, the Memory Unit all are housed inside the system unit.

The System Unit is the most important part of the computer. It contains the "brain" of the computer.

System units are generally housed in two types of cabinets:

1. Desktop type
2. Tower type











The power switch fitted to the system unit is used to turn the PC on or off. The Reset switch is used to switch the computer off and then on. The Hard disk drive, compact disk drive, floppy disk drives and other parts are placed inside the system unit. The amount of data that can be stored on a hard disk is much more than what can be stored on a Floppy disk. Apart from these parts, the System Unit contains the "brain" of the computer. The brain is contained in the CPU placed on the Motherboard. The keyboard, the monitor, the floppy disk drive, the hard disk drive and other parts of the PC are connected to the Motherboard by cables.

CHAPTER 3

Input, Output, Storage and Communication Device



We will learn about

-  Input Device
-  Output Device
-  Storage Device
-  Keyboard
-  Mouse
-  Joystick
-  Monitor
-  Printer
-  Plotter
-  Speaker
-  Communication Device
-  Hard Disk
-  Floppy Disk
-  Compact Disk

3.1 Input Devices

An Input device is used to feed data to the computer.

As already stated earlier data can be words, numbers, symbols, picture etc.

The examples of the various input devices are :

1. Keyboard
2. Mouse





3. joystick
4. Light Pen
5. Scanner

(We will learn about each of them later in this chapter)

3.2 Output Device

An output device is used to to get results from the computer. Output devices can display results on the screen or print them on paper. With the help of output devices we can also generate sound, plot graphical images etc.

Examples of the output devices are :

1. Monitor
2. Printer
3. Speaker
4. Plotter

(We will learn about each of them later in this chapter)

3.3 Storage Device

Where do we store the names of our friends ?

We store it in our memory which is located in the brain. Similarly, the computer has a storage section where it stores the data and information. This place is called the memory of the computer. This memory is temporary in nature because as soon as we switch off the computer, the information stored in the memory gets wiped off.

To store data permanently in a computer, storage devices are used.

The most popular storage devices in use are

- (i) Hard Disk
- (ii) Floppy Disk
- (iii) Compact Disk (CD)

(We will learn about each of them later in this chapter)

3.4 Keyboard

A keyboard is an input device which is used for typing data and instructions. Before we start working on the keyboard you will find there are two types of keyboards available.

1. Standard Keyboard
2. Internet ready Keyboard.



Generally the standard keyboard has 105 keys on it whereas internet ready keyboard has 121 keys.

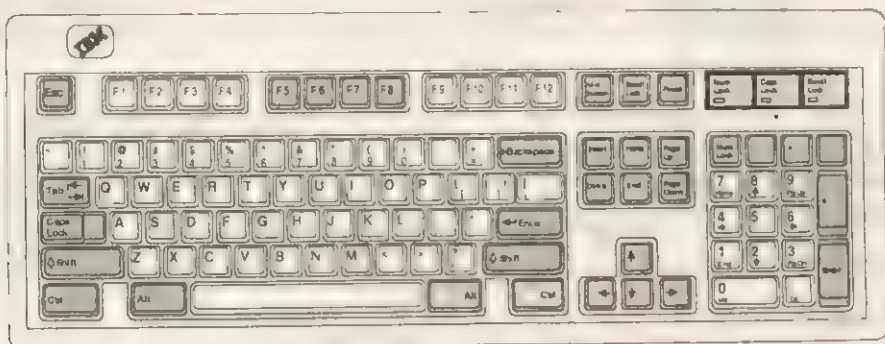


Figure of a Keyboard

What all can we enter in the computer through the keyboard?

The types of data, which we can enter through the keyboard, can be words, numbers, signs and symbols.

There are different types of keys found on the keyboard which are given below:

1. Alphabet Keys
2. Numeric Keys
3. Sign and Symbol Keys
4. Function Keys
5. Arrow Keys
6. Special Keys
7. Internet and Multimedia Keys

Now we will learn about some of these keys in details.

Alphabet Keys

The Keys marked with A,B,C,.....Z (26 letters) form the alphabet keys. The alphabet (A-Z) are arranged on the keyboard in the form given below.

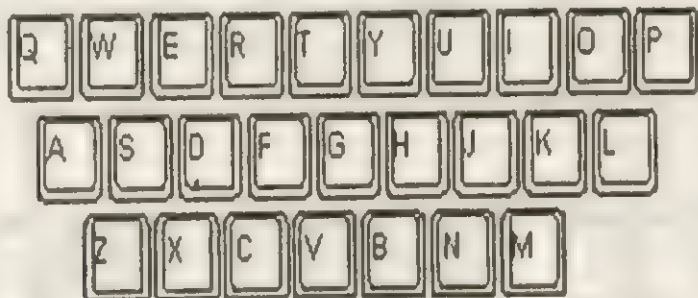


Figure of Alphabet keys on the Keyboard

Numeric Keys

Numeric Keys are marked with digits from 1-9 and 0. We use numeric keys to type numbers like 345,67,45 etc. You will find the numeric keys placed above the alphabet keys.

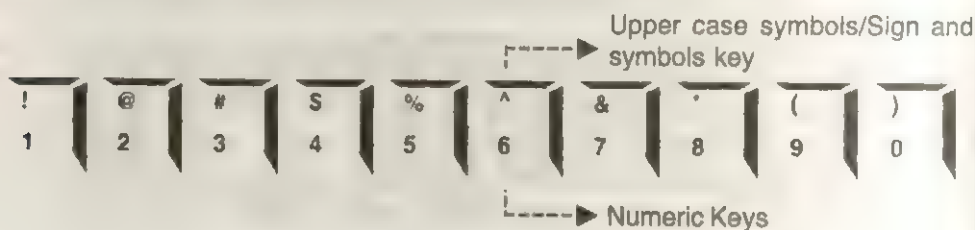


Figure of Numeric Keys and Sign and Symbols key on the Keyboard

Sign and Symbols Key / Upper Case symbols

You will also find different sign and symbols marked on top of the numeric keys. These symbols are called Upper Case symbols.

If you press the numeric key the number is displayed on the screen; but if you press the Shift key and the numeric key together then the symbol above the number appears on the screen. [We will learn about Shift key later in this chapter]

Function Keys

On the top row of the standard keyboard we find a set of function keys which are named as F1, F2, F3 etc. The function keys are used to give commands to the computer. For example, F1 is primarily used to bring the Help menu on the screen. Again the F9 key is used for saving our work we might have typed so far.

How many function keys do you have on your keyboard ? _____



Figure of Function Keys on the keyboard



Arrow Keys

Can you find out some keys on your keyboard with arrow symbols marked on them?

How many of them can you find ?

There are four keys with arrow marked on them pointing to four different directions. The four directions are up, down, right and left. These keys are used

to move the cursor around the document according to the directions marked on them. However we cannot make any change on the text through the help of these keys.



Figure of Arrow keys on the Keyboard

Special Keys

There are certain keys which work only when used in combination with other keys. These keys are called Special Keys. You will find that the three most commonly used keys of the keyboard which work in combination with other keys are :

- I. Control Key (marked as Ctrl key)
- II. Shift Key
- III. Alternate Keys (marked as Alt key)

Shift Key

This special key always works in combination with other keys. Unlike the CAPS Lock Key the keyboard has two shift keys. When we want to type a letter in its capital form without using the Caps Lock Key we press shift key and an alphabet key together. As a result the letter gets typed in its capital form. But if you press the Shift key when the Caps Lock key is on, you can type small letters. When we want to type an upper case symbol marked on a number key we press shift key and a number key together.

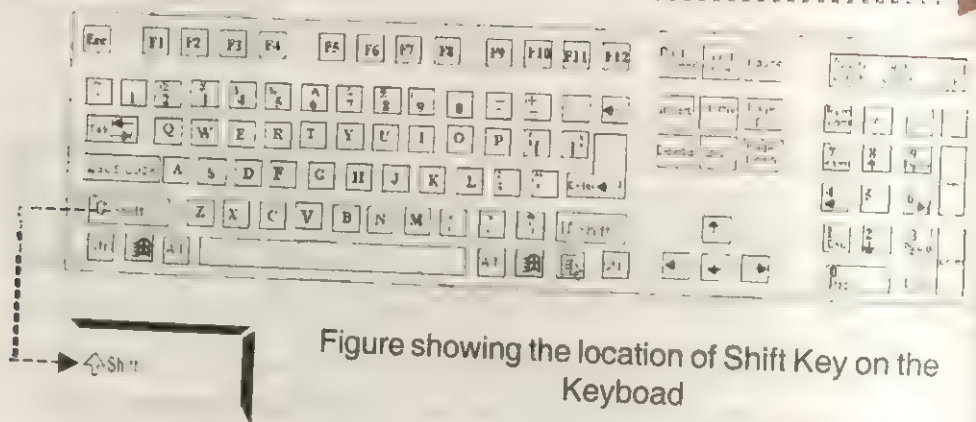


Figure showing the location of Shift Key on the Keyboard

Let us find out what is displayed on the screen when we press each of the numeric keys while keeping the SHIFT key pressed.

<u>INPUT</u>			<u>OUTPUT</u>
SHIFT +	1	=	!
SHIFT +	2	=	@
SHIFT +	3	=	#
SHIFT +	4	=	\$
SHIFT +	5	=	%
SHIFT +	6	=	^
SHIFT +	7	=	&
SHIFT +	8	=	*
SHIFT +	9	=	(
SHIFT +	0	=)



Delete Key

Say by mistake you type something, which is wrong, you can erase it by using the delete key. If you press the delete key it will erase the character to the right of the present cursor position.

Backspace Key

Similar to the Delete Key, Backspace key also erases characters, which have been typed by the user. But the Backspace key is used to erase characters one space to the left of the current cursor position.

Can you now tell the difference between the Backspace key and the Delete Key.

You will notice that if you keep on pressing the Backspace it will continuously erase all the characters to the left of the cursor.

Home key

If you press "Home Key" the cursor moves to the starting point of a line or starting point of the text screen depending on the software being used. Where do you find the Home key on your keyboard?

End Key

If you press the End key the cursor moves to the end of the current line.

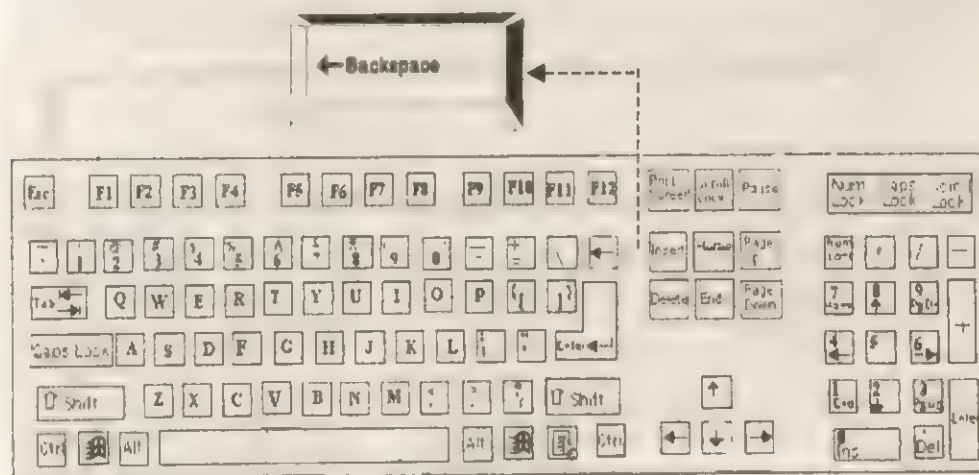


Figure showing the location of Back Space Key on the Keyboard

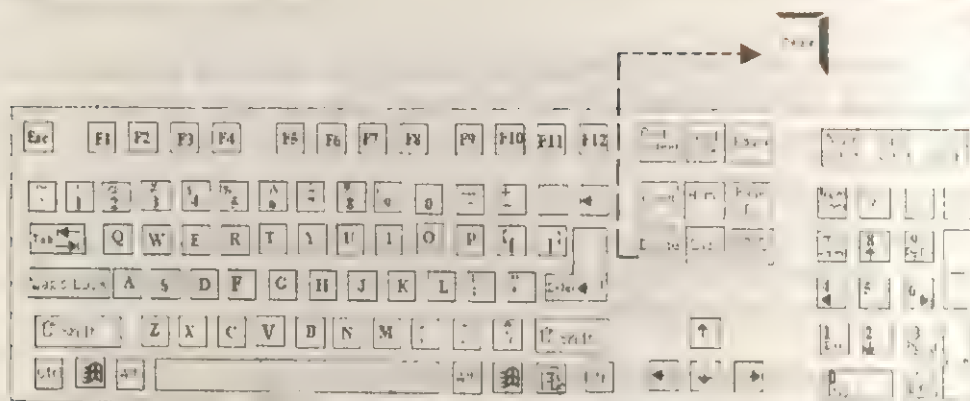


Figure showing the location of Delete Key on the Keyboard

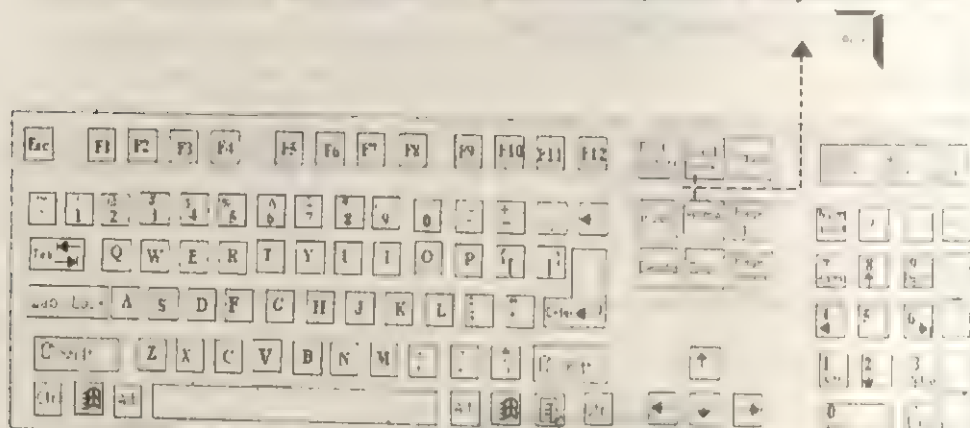


Figure showing the location of Home Key on the Keyboard

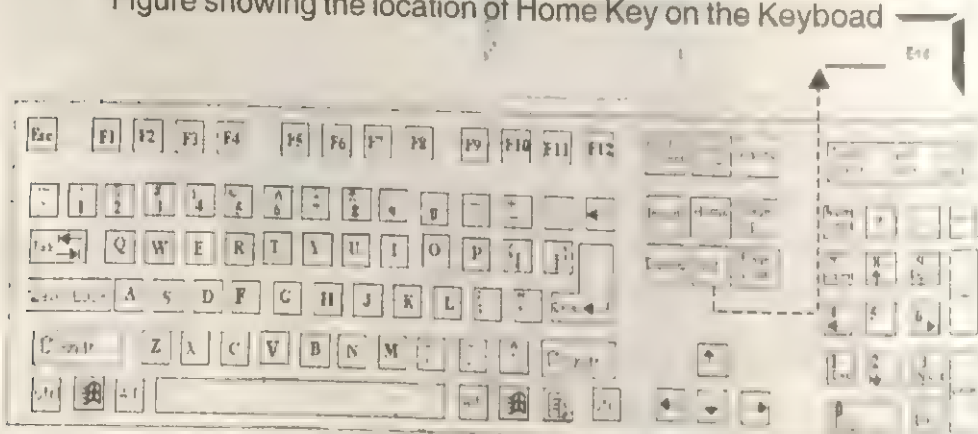


Figure showing the location of End Key on the Keyboard

Caps Lock Key

The CAPS LOCK key is found on the left side of the keyboard. Normally when we type any letter of the alphabet it appears as a small letter (lower case). When the Caps Lock is pressed once, a light glows which indicates that the CAPS LOCK is "on" and now any letter we type will appear in capital letter.(Upper Case).But if you press this key once again, the light goes off and you can type only small letters.

Students to Note :

A small letter is known as a lower case letter whereas a capital letter is known as upper case letter.

ESC Key

The Escape key is found on the top most left corner of the keyboard. The short form of Escape key is ESC key. This key helps us to cancel the effect of a command given to the computer.

Spacebar Key

The longest key of the keyboard is located at the bottom portion of the Keyboard. This key is called the spacebar key. On pressing this key the computer gives a gap in between words, alphabet or numbers etc.

Enter Key

Enter key is the most important and also the most frequently used of all the keys of the keyboard. It is also called return key. It is used to send the instruction or data to the CPU for necessary execution. While working in any wordprocessing software if you press the Enter key the cursor moves to the beginning of the next line. There are two enter keys on the keyboard.



Figure showing the location of Caps Lock, ESC & two Enter Key on the Keyboard



Try it yourself

Write True or False.

1. There are 3 shift keys in the keyboard.
2. The Escape key is required for cancelling the last command.
3. There are 23 Alphabet keys on the keyboard.
4. The numbers 0-20 are marked on the Numeric keys.
5. The Enter key is the longest key of the keyboard.
6. The Arrow keys are used to move the cursor on the screen.
7. The spacebar key types capital letters.
8. The Backspace key is used to erase the letters to the left of the screen.

3.5 Mouse

The mouse is one of the most important input device that is attached to a computer to move the cursor (pointer) on the screen. The cursor is a small blinking line on the screen. It shows where the user's next action is going to take place. The mouse fits easily into the palm of the user's hand.

We will learn about various operations of a mouse in "Starting with Windows" Chapter.



3.6 Joystick

Joystick is a stick mounted on a spherical ball which moves in a socket. The stick can be moved forward or backward, left or right; thus by moving the joystick we can change the direction of objects on the screen in the same manner. Joysticks are primarily used for playing games on the computer.

3.7 Light Pen

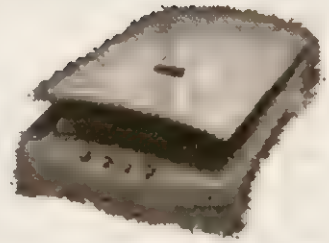
A Light Pen is an electronic device which sends electronic pulses. We can use this pen to write anything on the screen just the way we write on the blackboard. We can also draw sketches on a computer's screen.





3.8 Scanner

A Scanner is an input device. It may be attached to the computer whenever needed. It is just like a photocopying machine. If we place our photograph, a picture or a page of a story book under the scanner it scans an image or text and sends the copy of that image to the computer. The photograph or the writing then appears on the computer screen which can also be modified, saved and also printed out through the help of a printer.



Scanner are available in three varieties

- i) Hand held Scanners
- ii) Page Scanners
- iii) Flat bed Scanners

Which are the output devices?

The two most important output devices of a computer system are

1. Monitor 2. Printer.

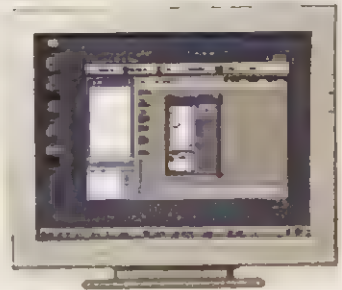
Other output devices are Speakers, Plotters etc.

3.9 Monitor

The Monitor of a computer is the most important output device. It looks quite similar to a television which you watch at home. The monitor is the screen of the computer. Whatever you type through your keyboard is displayed on your monitor. Monitor comes in different sizes like 14", 15", 17", 21" etc.

Monitors are of two types:

- 1. Monochrome Monitor
- 2. Colour monitor



Monochrome Monitor

The word "mono" means single and the word "chrome" means colour. So, a Monochrome Monitor displays the information in Black and White only. Monochrome monitors are used in lesser numbers these days.



Colour Monitor

Color Monitors are very popular these days. It can display the information in several colours.

3.10 Printer

The Printer is another important output device attached to a computer. Whatever is displayed on the monitor can be printed on paper through the help of a printer. For e.g. if you draw the picture of a flower through a software, the image of the flower can be taken out through a printer.

There are many types of printers available for use. In this class you will learn about the three printers which are most commonly used.

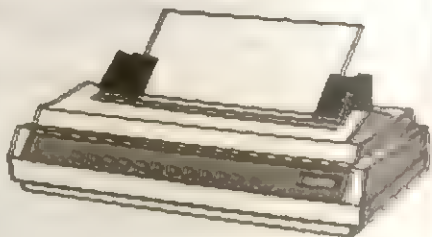
1. Dot Matrix Printer
2. Deskjet Printer / Inkjet Printer
3. Laser Printer

Dot Matrix Printer

In this type of a printer, an inked ribbon runs between the paper and the print head. The print-head moves across the paper and goes on printing the information. The characters are printed through small, closed dots. (Ask your teacher what type of printer you are using in your computer room).

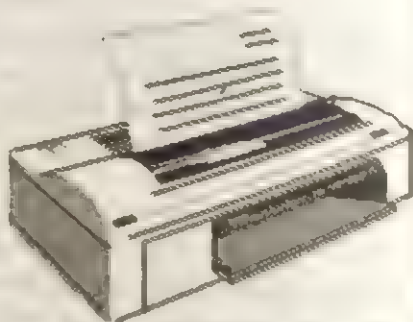
Dot Matrix printers are also known as impact printers

Dot Matrix printers transfer ink from a ribbon to a paper through the help of printer head which prints in the form of tiny dots which together gives the form of a number or a letter.



Deskjet Printer

These are used both in homes and offices. The printer can print both in black and in colour.





These printers can print pictures, texts and numbers. The quality of printing is not as good as Laser printer. These Printers are known as "Inkjet Printers".

Laser Printer

Laser printers give the best quality printing. But since it is very expensive and can print out high volume of printouts at a very short time, these are used primarily for office jobs. These can also print text, data and graphics equally well.

How does it work?

Laser printers use technology of transferring toner into a paper through heat.



3.11 Plotter

Plotters are used to produce engineering drawings, graphs, architectural drawings etc. on paper. Plotters have one arm which holds a pen. The arm moves in different directions. When the arm moves the pen also moves with it, drawing lines on the paper.



3.12 Speaker

Speaker is an output device and acts just like the mouth of the computer. It gives the result in the form of sound, which one can hear.

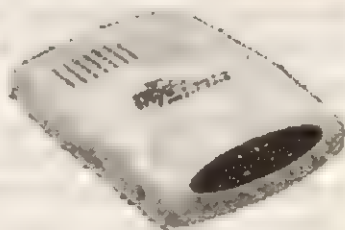
Since a speaker is not an essential part of a computer but may be attached to produce sound wherever required it may be termed as a peripheral of a computer.



3.13 Communication Device

A Modem is an essential device for accessing the Internet through a computer.

A modem is a very important communication device which allows one computer to talk to another through telephone lines. The word Modem is a short for Modulator Demodulator. Since the modem allows the computer to both send and receive information it is



called a communication device.

Have you seen a modem? Is it attached externally to your computer or internally? We will find some modems are located inside the computer while others are located outside the computer. Those located inside are called Internal Modems whereas the ones which are located outside the computer are called External Modems.

A modem is an essential device for accessing the Internet through a computer.

3.14 Storage Device

The most important storage devices are Hard Disk and Floppy Disk. More recently Compact Disc are becoming increasingly popular as storage device.

Hard Disk Drives:

Hard Disk Drive is the most important permanent storage device found inside most computers. A hard disk drive contains rotating disks where data and programs are stored magnetically.

What is the amount of information we can store in a hard disk?

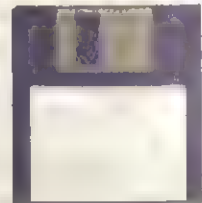
The amount of information depends on the size of the hard disk. The higher the storage capacity the more data it can store. For example, now a days hard disks are available in size of 20GB (gigabyte), 40 GB (giga byte), 80 GB (gigabyte) etc. Thus a 80 GB hard disk will hold more data than a 20 GB hard disk. A hard disk can hold more data than a floppy disk drive.



3.15 Floppy Disk Drives :

Another very important storage device found in almost all PCs is a Floppy Disk Drive popularly known as a FDD. The floppy disk device allows a user to save both data and programs in floppy disks. These floppy disks are removable, lightweight and portable too. The size of the floppy disks

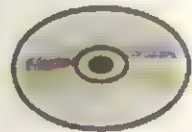
which are used now-a-days are 3 1/2" (inches) having a storage capacity of 1.44 MB (Megabyte). Although floppy diskettes can hold much less data in comparison to a hard disk drive, these can be carried from one place to another because of its lightweight and small size. (You can also fit a floppy disk inside your shirt pocket).



3.16 CD Rom (Compact Disk-Read Only Memory)

We have all heard about Multimedia computers. In all such computers a CD Rom drive is attached. The storage media used in a CD Rom drive is a CD-Rom (commonly known as CD) which is an optical disk and can store huge amount of data. The CDs which we use now-a-days can store around 650 MB-700 MB of data that is around the data stored

in 450 Floppy disks of 1.44 MB of storage capacity. A CD is a circular plastic sheet with a metal coating and a layer of transparent put again on it. The data stored on it is permanent.




CHAPTER 4

Some important things you must know
about the computer



We will learn about

-  Working of a computer
-  Hardware
-  Software
-  Program
-  System Software
-  Application Software
-  Starting a computer
-  Local Area Network
-  Internet



4.1 How does the computer work ?

There are two elements which work together to make up a computer system :

1. Hardware
2. Software

4.2 Hardware

The different parts with which a computer is made up of is known as hardware. These are the parts which we can see and touch. All the input and output devices and the electronic circuits constitute the hardware of the computer.

4.3 Software

Software is the name given to the instructions or the information that the computer needs to work on. The user gives instructions which tell the computer what to do with the information.

For example, You can instruct a computer to multiply two numbers. The numbers that are entered into the computer for multiplying are the input. The set of instructions that perform the task of multiplication is the program. The product (output) which in this case is the information. We cannot 'touch' the software but it can be stored on floppy disks, hard disks etc.

We can classify software into two types :

- ◆ Operating / System Software
- ◆ Application Software

4.4 System Software

The software which controls the working of a computer may be termed as system software. DOS (Disk Operating System), WINDOWS, LINUX, UNIX are examples of system software.

4.5 Application Software

Application software are used to do various useful jobs with the help of computer like writing letters, doing accounting jobs, creating tables with graphs, playing games, listening to music etc.

Let us find out some examples of these softwares available in the market:

- Graphics Software allow us to draw pictures.
- Data base software helps in storing millions of data and allows us to work on data and keep track of the data.
- Spreadsheet software primarily works with numbers and helps us in doing various calculations for eg. finding the highest marks obtained in a class of 100 students. It also helps us in drawing graphs of different types.
- Word processing software helps us to write letters , forms, stories, applications etc.

Again there are accounting packages available like Tally, Fact, EX and many more for doing accounts jobs. Various ready made application software are available in the market for meeting the general requirements of the users. But customized software are developed for meeting the special requirements of customers.

These application software are popularly known as " Pacakage"

4.6 What is a Program ?

A program is a set of instructions which is fed into the computer to process data.

4.7 How to start a computer ?

- Switch on the Power.
- Switch on the CVT or the UPS which acts as a Power Correction Device.
- Switch on the CPU.
- Switch on the monitor.
- Once the computer is switched on you will see the desktop on the monitor screen.

4.8 Local Area Network

A number of computers located in a school, an office, or any workplace can be interconnected to form a Local Area Network. The short form of Local Area Network is LAN.

The primary advantage of LAN is to share data, programs, hardware resources etc. amongst many computers.

For example, one single printer can be used by many computer users attached through a LOCAL AREA NETWORK.

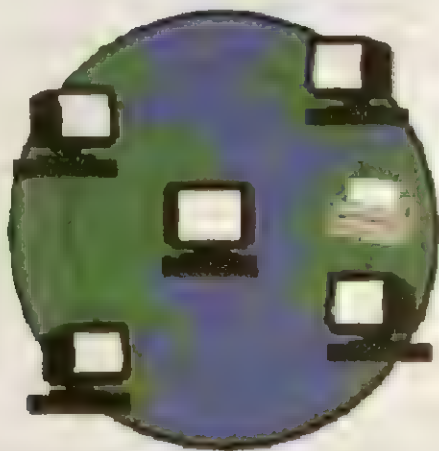


Figure of a Local Area Network
sharing one printer
connected to five (5) computers through LAN

4.9 What is an Internet ?

We have just learnt about networking through Local Area Network. In fact when we connect two or more computers a network is created. The internet is not really one network. It is a **network of networks** and is really huge.

Thus Internet is a set of computers communicating to each other through a medium which can be telephone lines, fibre optic cables, satellite links, etc.

It is a place from where we can talk to all our friends, relatives both inside and outside the country.

It is a vast resource of information on every subject and really huge. An internet user can access all the information of the world he requires by sitting in any corner of the world.

What all do we need to have an internet connection?

1. A computer
2. A Modem
3. A Web Browser
4. Telephone Line
5. Internet Service Provider (ISP)

We already know about a computer and a modem. Let us find out the necessity of Web browser, telephone line, for building up of internet connection.

What is a Web Browser?

The software we use to navigate through the web is known as a web browser. Before starting to work on the internet we have to

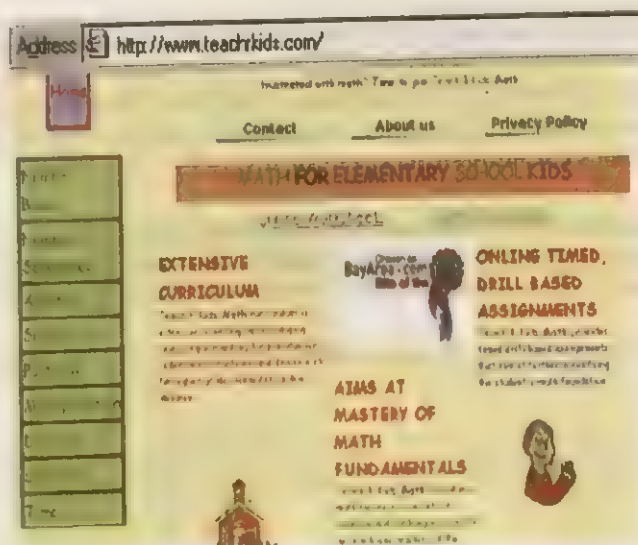


Figure showing a Web page related to kids education



ensure that a web browser is installed in our computer.

Two most popular web browsers used in today's world are:

- i. Internet Explorer
- ii. Netscape Navigator

Telephone Line

It is essential to have a telephone connection to get connected to the modem. All the data and the information pass through the telephone lines.

Internet Service Provider (ISP):

ISPs provide Internet connection for a specific amount of time against payment. Popular ISPs are VSNL, MTNL, BSNL, etc.

Points to remember

Just imagine by using a small PC and a telephone connection we can reach anywhere in the world through the internet. We can access information of millions of topics ranging from cricket match to swiss chocolates by click of a mouse.

Each computer connected to internet can communicate with the other computers; we can send or receive message or retrieve (take out) information.

Message or information are received or sent on Internet in the form of files.

How does the computers connected to the internet communicate with one another?

This is done by using a language called the Transmission Control Protocol / Internet Protocol (TCP / IP). This language acts as a medium of communication amongst numerous computers connected to internet.

We can communicate with anyone connected to the internet by sending e-mail (electronic mail), send messages to a friend or list of friends, chat with people whom we have not even met, and also conduct video conferencing on the net.





Internet is a great source for education and entertainment (edutainment).

CHAPTER 5

Caring about your computer and its accessories



We will learn about

-  Taking care of the computer
-  Protecting the computer from dust
-  Protecting the computer from heat
-  Avoid eating and drinking while working on a computer

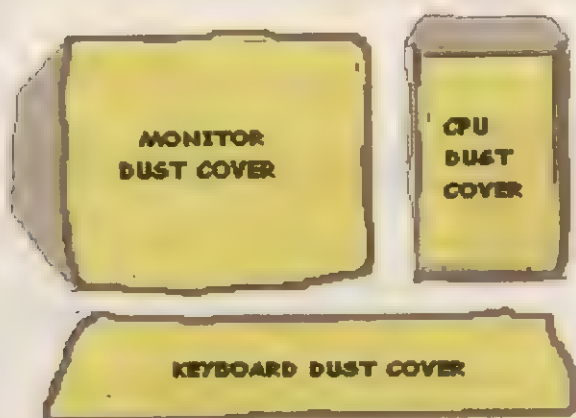
5.1 Taking care of the computer

Just the way we take care of ourselves we also have to follow certain rules to take care of our valuable computer so that it may work without any trouble for many years to come.

5.2 Protecting the computer from dust

Ensure that dust particles or dirt do not gather on the computer at all. These are the biggest enemy of a computer and can stop the computer from functioning at any moment.

Always remember to cover the computer, printer with dust covers or soft cloth cover to protect it from gathering of dust when not in use.



Ensure that the room where a computer is placed is always kept dust free; so keep the door or the windows closed to the maximum time possible.

Keep your regular shoes outside the computer room to avoid dust from entering the room.

You may also keep a separate pair of slippers to be worn in the computer room.

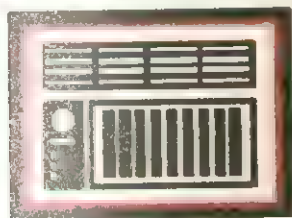


Open your shoes
before entering
the computer room.



5.3 Protecting computer from heat

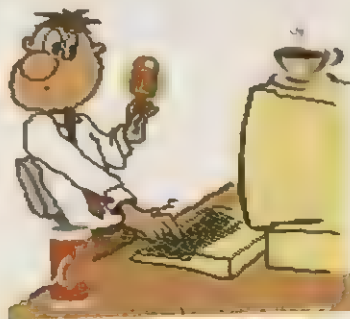
When a computer works heat is generated within it. You may be also aware of the fact that heat is also a major problem for normal functioning of computer. If possible a computer room should have an air conditioner to keep the temperature cool; otherwise a fan should be definitely used while using a computer.



I am cool and happy
in an AC environment

5.4 Avoid eating and drinking while working on a computer

In case you are having a Cola, an icecream, a piece of chocolate or any other food while working on a computer it is quite possible that accidentally some amount of the drink may spill over the keyboard or part of the chocolate goes inside the C.P.U.; there is every possibility that the computer may cause problems while working.



Do not eat icecream or drink cola,
coffee while working on computer.

CHAPTER 6

Visit to the Logoland



We will learn about

- ♥ Meeting the turtle
- ♥ Logo Screen and Exiting from LOGO
- ♥ Activities of the Turtle
- ♥ HOME of the Turtle
- ♥ Moving Forward
- ♥ Moving BACK
- ♥ Moving the turtle in the Forward & Backward Direction
- ♥ Moving the turtle in the LEFT & RIGHT Direction
- ♥ Definition of Square
- ♥ Drawing a square with the turtle moving through the RIGHT and LEFT Direction
- ♥ Definition of a rectangle
- ♥ Drawing a rectangle with the turtle moving through the RIGHT and LEFT Direction
- ♥ Drawing a Triangle and right angle triangle.
- ♥ Hiding the turtle and showing the turtle.
- ♥ More about DRAW.
- ♥ Text Screen
- ♥ Full Screen
- ♥ Difference between CS and DRAW
- ♥ CLEAN
- ♥ Deference between DRAW, CLEAN & HOME
- ♥ CLEARTEXT
- ♥ PENUP and PENDOWN



6.1 Meeting the LOGO turtle

LOGO is a simple, easy to understand, language developed for small children. LOGO was developed by Seymour Pappert along with his friends in 1967 at the Massachusetts Institute of Technology.

Let us start!!

After your teacher makes your computer ready for use, you will see

C: /> (i.e. C prompt)

Step 1: Type LOGO

Step 2: Press ENTER

ALL SET HAVE FUN!!
TOP LEVEL
?

Your screen will give the message displayed as given in the adjacent figure.

Step 3: Type DRAW

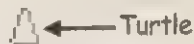
Step 4: Press ENTER

You will see a tiny triangular shaped figure appears in the middle of the screen with a question mark symbol (?) at the lower portion of the screen. The tiny triangular shaped figure is known as **Turtle**.

The question mark symbol (?) is the place where we give certain instruction to the **Turtle**. The question mark symbol is known as LOGO prompt.

Next to the question mark symbol (?), you will see a "___" symbol. This is called the **Cursor**. As you type each character, the cursor moves one position to the right.

(Logo is one of the simple languages which the computer can understand and is primarily used for drawing shapes and figures).



?DRAW



6.2 LOGO Screen

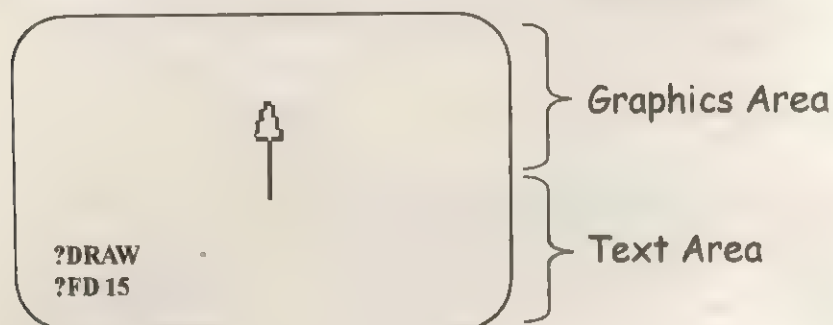
If we observe we will find that the LOGO screen consists of two portions.

Graphics Area

This is the part of the screen where the turtle draws pictures.

Text Area :

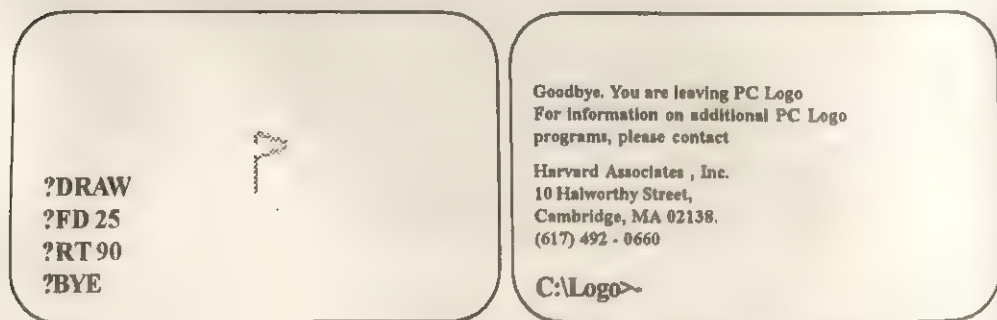
In this area we type the logo commands which are known as PRIMITIVES. The turtle follows the primitives typed in the text area and makes the drawing on the screen as per the primitives.



6.3 Exiting from LOGO

When we want to exit from LOGO we can do it by typing the command 'BYE' at the logo prompt and pressing the 'Enter' Key.

You will find the following screens.





6.4 Activities of the turtle

The turtle waits at the centre of the computer screen till you ask it to move around. You can order it to move in the forward and backward direction. It can move on the screen from top to bottom; left to right; in different angles; in circles; in merry go rounds, it can hide and do many other things.

Let us find out one by one what you can do with the turtle.

The various LOGO commands are known as PRIMITIVES.

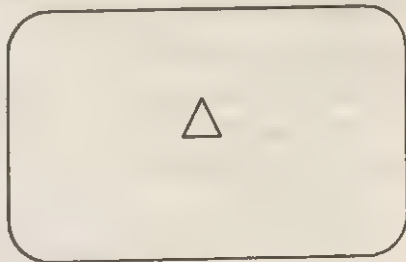
Just the way in your playing field you have a boundary wall outside which you cannot go and play, similarly there is FIELD for the TURTLE'S movement beyond which it cannot move beyond in the same direction.

Before you give orders to the turtle for moving here and there you should know that the HOME of the Turtle is the middle of the screen.

- Type in HOME
- Press Enter

You will find the turtle to be in the middle of the screen with its head pointing upwards.

So wherever the turtle is, the moment you order it to go back to its HOME it comes to the middle of the screen. [We will teach about more on HOME command later in this chapter.]



Try it yourself



1. Answer the following questions :-

- a) What happens after typing DRAW and pressing the Enter Key?
- b) Where does your Turtle wait on the screen for your instructions?
- c) Where is the home of the turtle?
- d) Where is your home?

2. Fill in the blanks:

- a) The ▲ is known as the T — — — — —
 b) In the computer, the turtle understands _O_ language.
 c) The center of the screen is the _O_ of the turtle.
 d) The " _ " which we can see after the question mark is known as _R_ _O_.
 e) We can see the turtle by typing D_ _ _ and pressing the E_ _ _ _ key.

6.5 Moving Forward

You must have taken part in the march past in the school. Now when your teacher says FORWARD march what do all of you do? You move in *front*, isn't it, till the teacher asks you to halt.

Similarly, the turtle can move Forward any number of steps (the turtle is very tiny so it moves very slowly with its little steps). The short form of FORWARD is FD

The turtle in your computer starts moving **FORWARD** only after it knows how far it has to move, otherwise it will not move.

Say you want your turtle to move **FORWARD** by 40 STEPS. You have to type the following : (instead of FORWARD you can also type FD)

Step 1: Type FORWARD

Step 2: Press the spacebar key for typing a blank space.

Step 3: Type 40

Step 4: Press ENTER

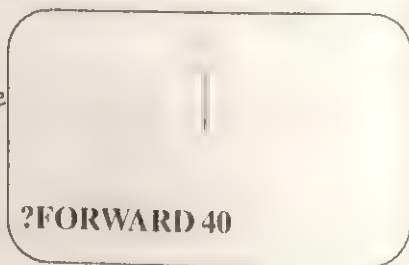
Now the turtle has moved Forward by 40 steps.

Let us see how the command is written when we try to move the turtle forward by 50 steps.

?FD 50 (Enter)

↑
(Space)

The Turtle has moved 50 steps Forward.



Say, by mistake you have typed FD 40 in place of FD 50. Remember to use the BACKSPACE key or DEL key to erase and type again from start.

Now, say by mistake you have typed FD50 and pressed the ENTER or RETURN key. What is missing?

A blank space is missing between FD and 50.

How does the computer react to a wrong primitive?

The computer displays a message on the screen .

This is not a Logo Procedure

This means that LOGO does not understand FD50. We must insert a blank space between FD and 50.

So that the primitive becomes ? FD 50

Let us move forward again.

Before moving let us see a fresh screen. You have to type in

? CLEARSCREEN

or

? CS

[We will learn about CS primitive in details later in this chapter]

Move forward by 45 steps.

Now move forward by 181 steps. What happens to the turtle?

(Teachers **Note:** Inform the students regarding the maximum vertical and horizontal moves of the TURTLE on the school's computer system)

Try it yourself

1. Tick Right [✓] or Wrong [X]

- a) FORWARD 30 [] b) FWD 10 [] c) FD 50 []
d) FORWAD 100 [] e) DF 40 []

2. Try the following steps to understand the steps of turtle.

- a) FD 15 b) FD 25 c) FD 35 d) FD 45 e) FD 55 f) FD 65



6.6 Moving BACK

You must have seen your father backing up his car, isn't it? How does he do it? Say, your car is in the garage. So in order to come out, it has to move in the reverse direction. That means it is moving in the backward direction but its face is still in the front.

Anyway, Say, you want your Turtle to move back by 50 steps. Remember to mention the number of steps you want to move the Turtle after typing BACK.

Step 1: Type BACK

Step 2: Type a blank space by pressing the space bar key.

Step 3: Type 50

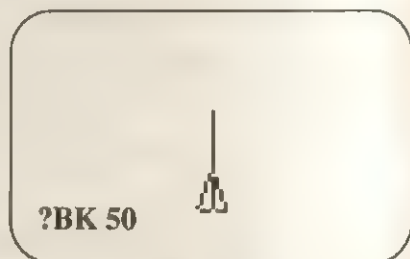
Step 4: Press ENTER

Instead of typing "BACK" you can just type "BK". To make the turtle move back by 60 steps we have to type the following primitive

? BK 60 Enter



space



[Students to note:

Unlike the primitive FORWARD the term BACKWARD does not exist as a primitive in the LOGO software.]

Try moving the turtle in the backward direction with the following steps:

a) BK 25 b) BK 35 c) BK 45 d) BK 55 e) BK 65

Try it yourself



1) Tick Right [✓] or Wrong [✗]

a) BK 35 []

b) BACKWARD 20 []

c) BACK 65 []

d) FD 25 []

e) FORWARD 45 []





2) Arrange the Jumbled Words

- a. WDFRORA

--	--	--	--	--	--	--
- b. ARDW

--	--	--	--
- c. OOGL

--	--	--	--
- d. LRTTEU

--	--	--	--	--	--
- e. IRPMVETII

--	--	--	--	--	--	--	--	--	--

6.7 Moving the turtle in the Forward & Backward Direction

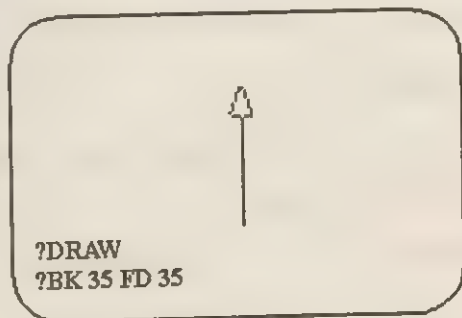
Now since you have learnt both the primitive FORWARD and BACK you may try out both at the same time to see what happens:

```
?DRAW
?BK 35
?FD 35
```

[Students please note:

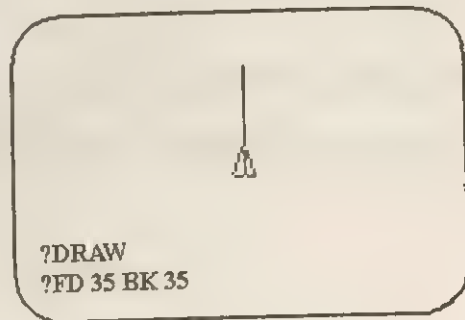
An interesting thing to note is you can also give more than one primitive in a single line but remember to insert the blank spaces whenever required. For eg. the above primitives can be also written as :

```
?DRAW :
BK 35 FD35
```



If you move the same number of steps FORWARD and BACK subsequently you will actually get only one line of movement of the turtle.

```
?DRAW
? FD 35 BK 35
```



Try it yourself



1. Draw the figures for the following commands:-
a) FD 40 BK 40 b) BK 25 FD 25 c) FD 60 BK 30

6.8 Angle

What is an angle?

When two lines meet at a point an angle is formed. In this class we will learn about few angles which will be used for the movement of the turtle.

Do you know how a 90° degree angle looks?

Yes, this a 90° degree angle.

A 90° degree angle is also known as right angle.

When two lines meet at a point and the angle formed between them is 90° degrees a right angle is formed.

$$\angle ABC = 90^\circ$$

If we divide the 90° (degree) angle into two equal parts we get two 45° angle.

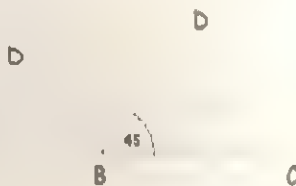
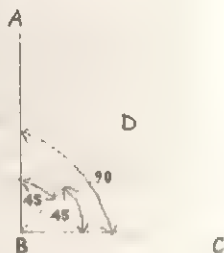
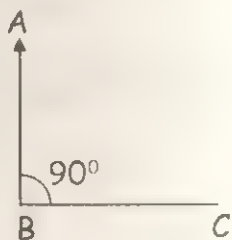
$$\angle ABC = 90^\circ$$

$$\angle ABD = 45^\circ$$

$$\angle DBC = 45^\circ$$

$$\text{Hence } \angle ABD + \angle DBC = \angle ABC$$

We have drawn two 45° (degree) angles to explain the concept.

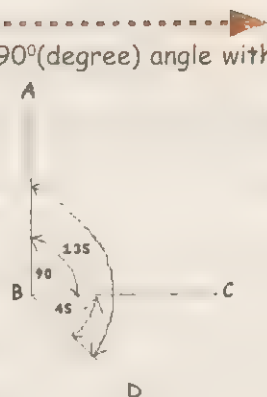


Again if we need a 135° (degree) angle we have to add a 90° (degree) angle with another 45° (degree) angle.

$$\angle ABC = 90^\circ$$

$$\angle DBC = 45^\circ$$

$$\angle ABD = \angle ABC + \angle DBC = 135^\circ$$



6.9 Moving in the LEFT and RIGHT direction

The Turtle is looking in the left direction

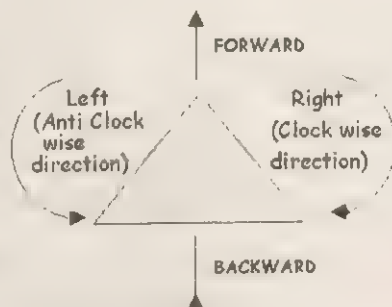


The Turtle is looking in the right direction



The Turtle can change the directions of its head.

Till now we have found the turtle moving only in two directions, forward and back ward direction. We will now learn how we can move the turtle in the right and left direction by turning its face through a given angle.



We can rotate the turtle from 0° to 360° both in rightward and leftward direction. [Rotation means angular movement of the turtle.]

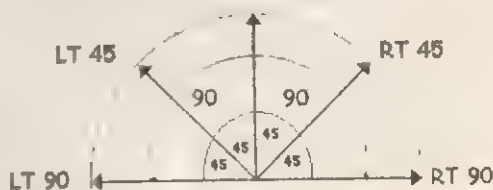
However in this class we will learn the angular movement of the turtle only for 90° (degree) movement and 45° (degree) movement. We will learn in our higher classes that all angular movement are measured in degrees.

The RIGHT (RT) movement

The RT command turns the turtle through a given degree of rotation in the rightward (clockwise) direction.

The LEFT (LT) movement

The LT command turns the turtle through a given degree of rotation in the Left (anti clockwise) direction.



Computer Horizons Book- III

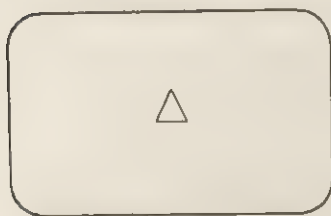
Let us try to understand the movement of the turtle in the right and left direction.

Primitive Activity of the Turtle

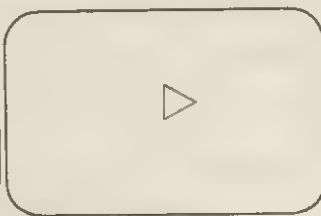
DRAW The turtle waits pointing its head to the top of the screen.

RT 90 The turtle turns its head on the right by 90° angle.

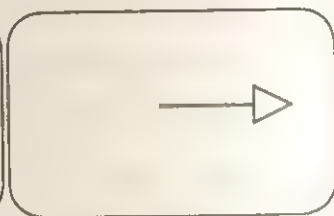
FD 30 The turtle moves forward by 30 steps.



?DRAW



?RT 90



?FD 30

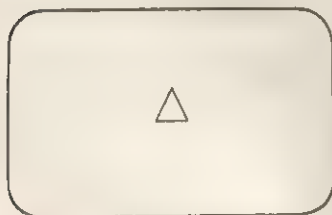
Primitive

Activity of the Turtle

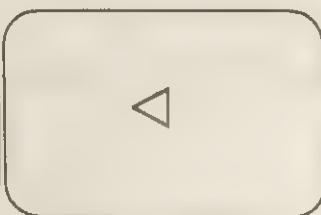
DRAW The turtle waits with its head pointing to the top of the screen.

LT 90 The turtle turns its head on the left by 90° angle.

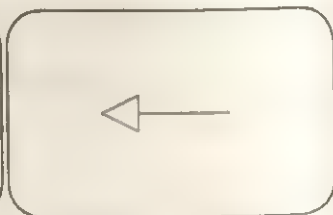
FD 30 The turtle moves forward by 30 steps.



?DRAW



?LT 90



?FD 30

6.10 Do you know what a square looks like?

A square is a four sided figure with all its four sides being equal to each other and each of its angle equal to 90° (right angle).

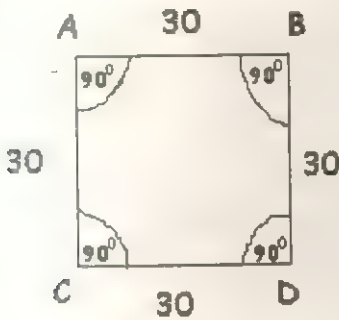


Fig. 1

In Fig. 1

Side AB = 30

Side BD = 30

Side DC = 30

Side CA = 30

$$\angle A = 90^\circ$$

$$\angle B = 90^\circ$$

$$\angle C = 90^\circ$$

$$\angle D = 90^\circ$$

Thus we can see :

$$AB = BD = DC = CA = 30$$

$$\angle A = \angle B = \angle C = \angle D = 90^\circ$$

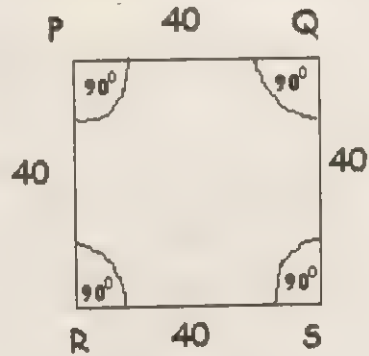


Fig. 2

In Fig. 2

Side PQ = 40

Side QS = 40

Side SR = 40

Side RP = 40

$$\angle P = 90^\circ$$

$$\angle Q = 90^\circ$$

$$\angle R = 90^\circ$$

$$\angle S = 90^\circ$$

$$PQ = QS = SR = RP = 40$$

$$\angle P = \angle Q = \angle R = \angle S = 90^\circ$$

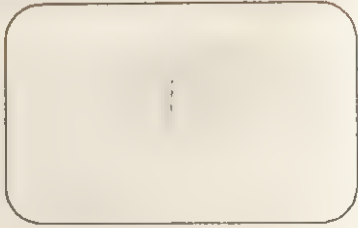
Thus, you must have observed that four sides of any square are equal to each other and each of its angle is equal to 90° (right angle).

6.11 Drawing a square with the turtle moving through the
RIGHT

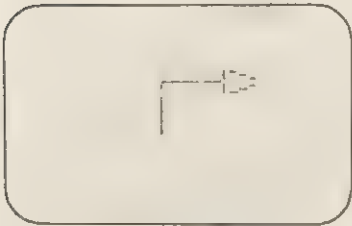
Follow these orders:



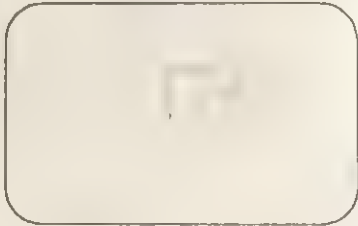
?FD 60



?RT 90



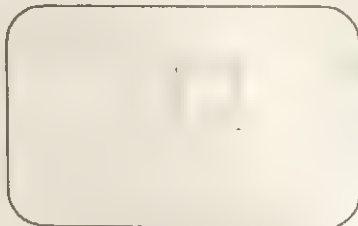
?FD 60



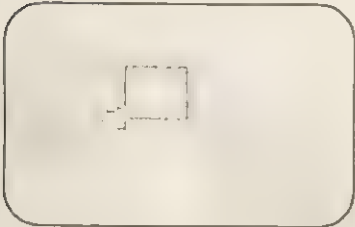
?RT 90



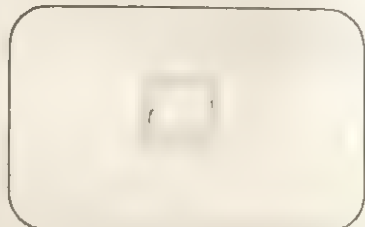
?FD 60



?RT 90



?FD 60



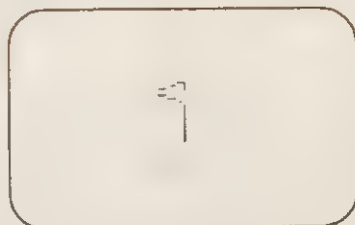
?RT 90

6.12 Drawing a Square with the turtle moving through the LEFT

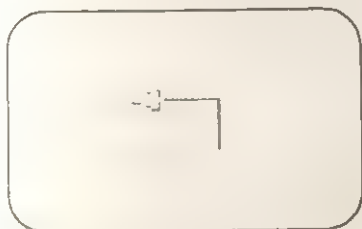
Follow these orders:



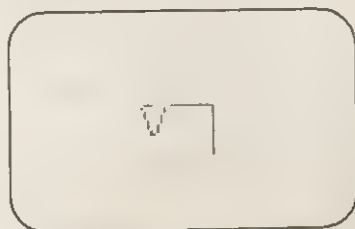
?FD 60



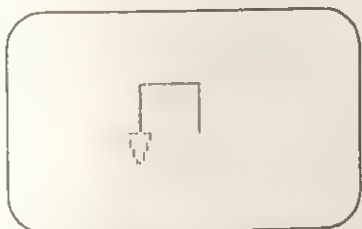
?LT 90



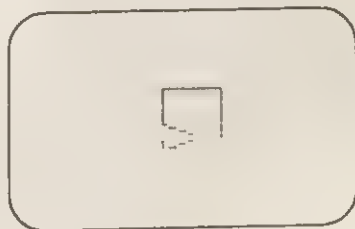
?FD 60



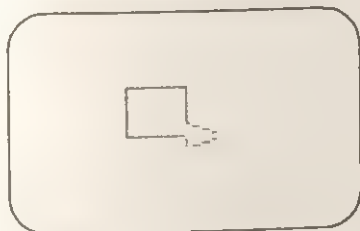
?LT 90



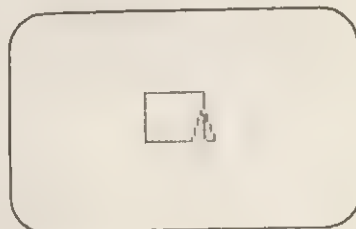
?FD 60



?LT 90



?FD 60



?LT 90

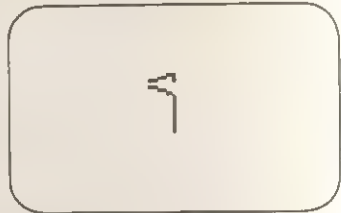
Try it yourself



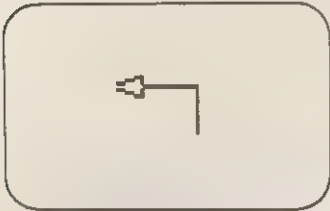
Write down the primitives for drawing a square in the blank lines below the screen having each of its sides equal to 35 turtle steps.



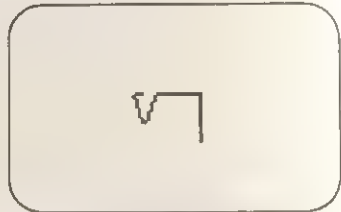
?



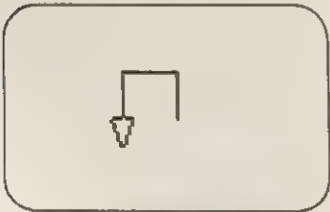
?



?



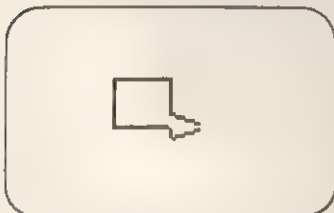
?



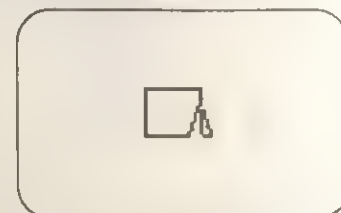
?



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?



?

6.13 Do you know what a rectangle looks like?

A rectangle is a four sided figure having its opposite sides equal to each other. Each of the angle of a rectangle is equal to 90° (right angle).

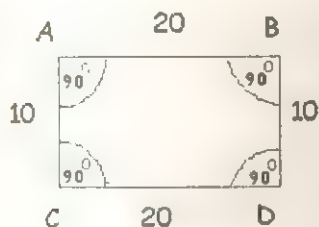


Fig1.

Side AB and CD are opposite sides. They are equal to each other.

Side AB = 20

Side CD = 20

Thus, side AB = CD.

Again side AC and side BD are opposite sides. They are equal to each other.

Side AC = 10

Side BD = 10

Thus Side AC = BD

$$\angle A = \angle B = \angle C = \angle D = 90^\circ$$

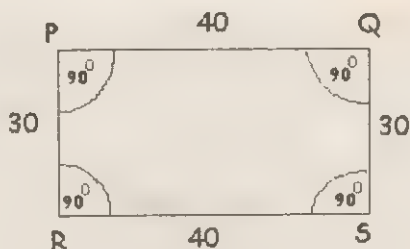


Fig2.

Side PQ and RS are opposite sides. They are equal to each other.

Side PQ = 40

Side RS = 40

Thus, side PQ = RS

Again, side PR and side QS are opposite sides. They are equal to each other.

Side PR = 30

Side QS = 30

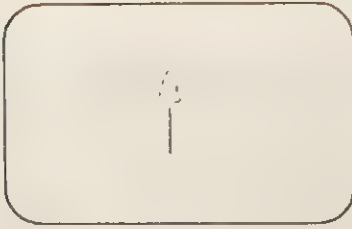
Thus Side PR = QS

$$\angle P = \angle Q = \angle S = \angle R = 90^\circ$$

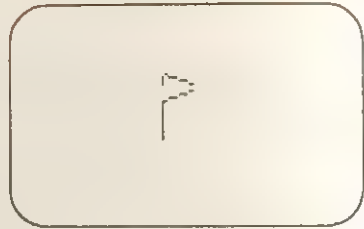
Thus, you must have observed that opposite sides of any rectangle are equal to each other and each of its angle is equal to 90° degree(right angle).



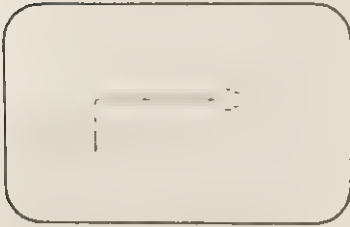
6.14 Drawing a rectangle with the turtle moving through the RIGHT direction having opposite sides of 20 turtle units and 40 turtle units respectively



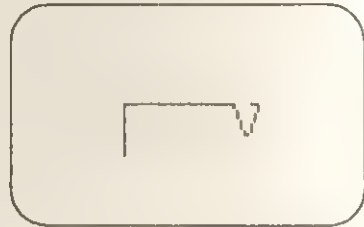
?FD 20



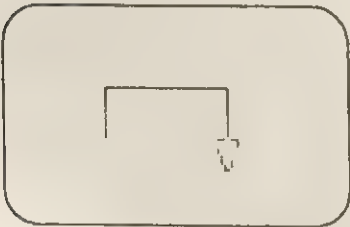
?RT 90



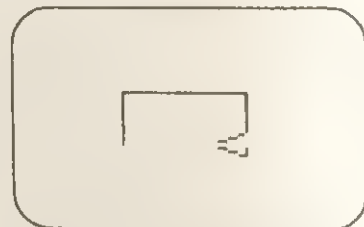
?FD 40



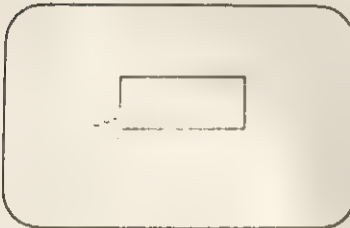
?RT 90



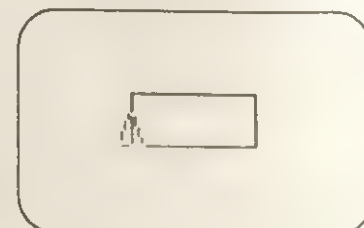
?FD 20



?RT 90



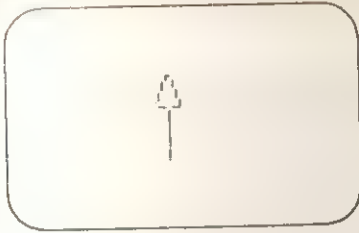
?FD 40



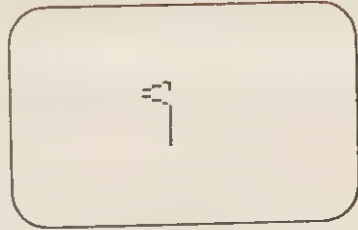
?RT 90



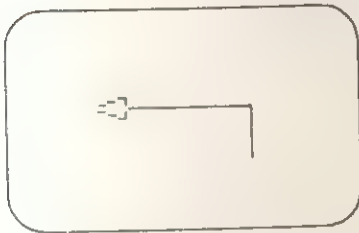
6.15 Drawing a rectangle with the turtle moving through the LEFT direction having opposite sides of 20 turtle units and 40 turtle units respectively



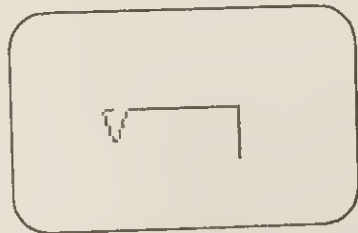
FD 20



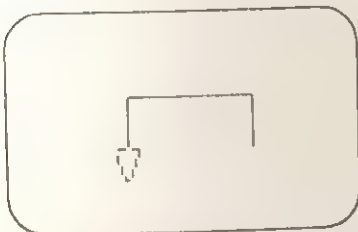
LT 90



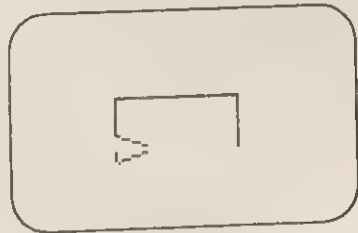
FD 40



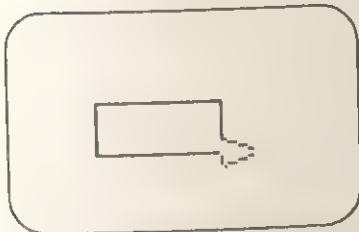
LT 90



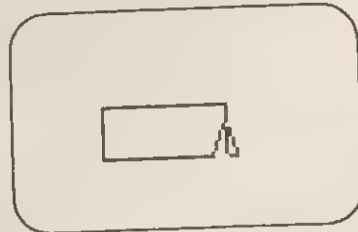
FD 20



LT 90



FD 40

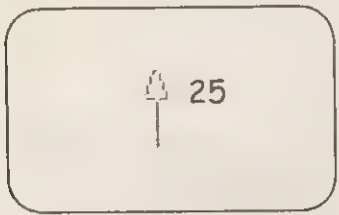


LT 90

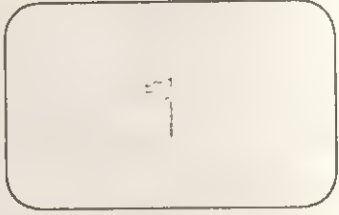


Try it yourself 

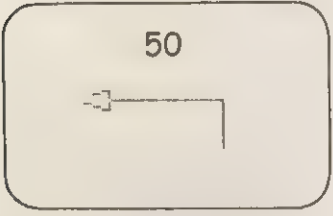
Write down the primitives for drawing a rectangle in the blank lines below the screen having each of its opposites sides equal to 25 and 50 turtle steps respectively.



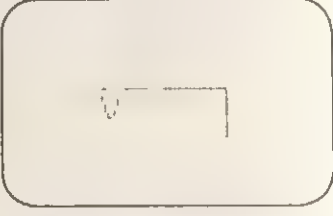
?



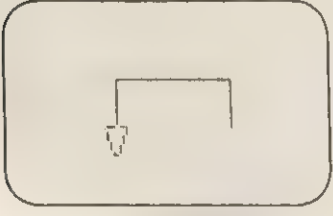
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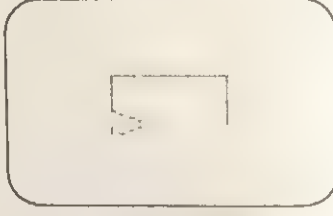
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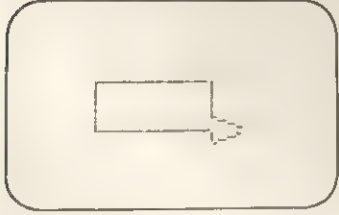
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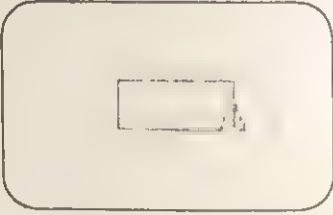
?



?

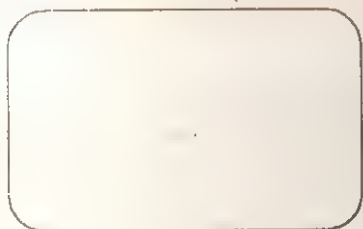


?

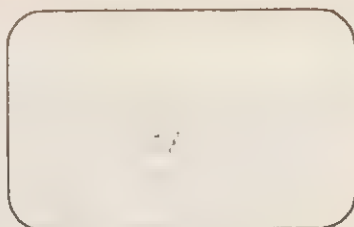


?

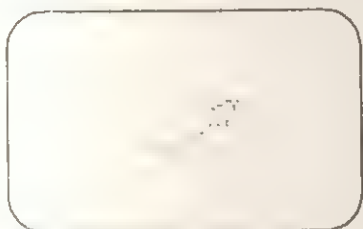
6.10 Drawing a triangle by moving the turtle through 45 (degrees) and 90 (degrees) angle and using HOME Command.



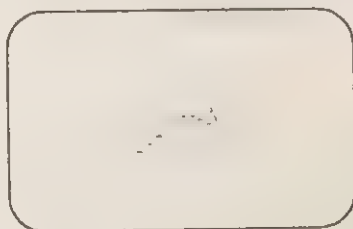
?DRAW



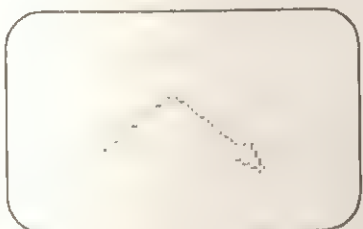
?RT 45



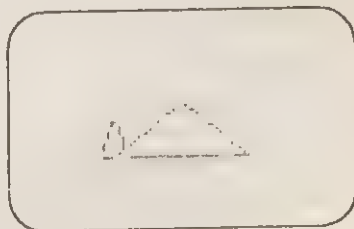
?FD 40



?RT 90



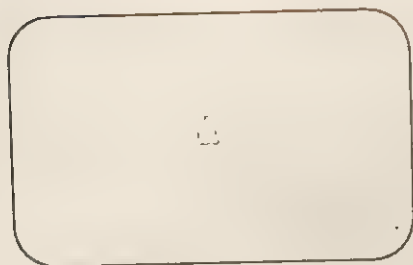
?FD 40



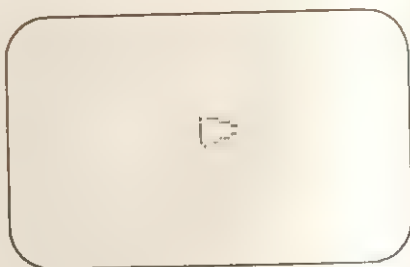
?HOME

[Teachers to note : In this class we will learn to make the third side of the triangle through the primitive HOME since students are new to the concept of interior and exterior angles. We will learn the concept of interior and exterior angles in the higher classes.]

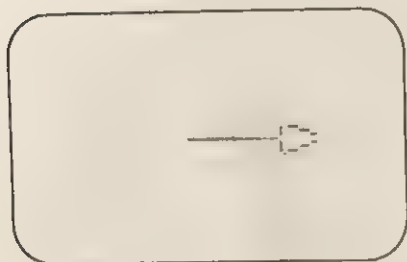
6.17 Drawing a triangle by moving the turtle through 90° degrees and using HOME Command.



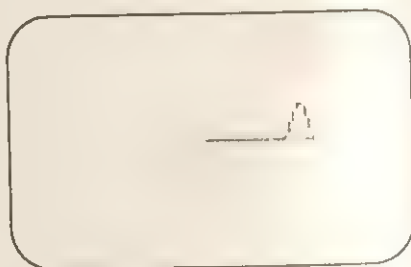
?DRAW



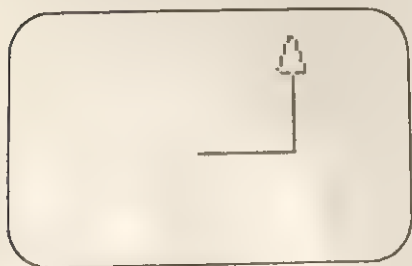
?RT 90



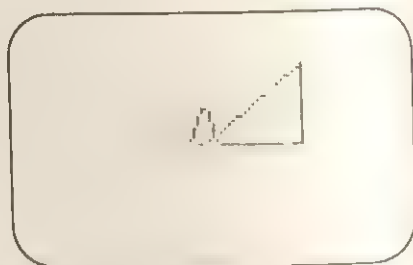
?FD 40



?LT 90



?FD 40



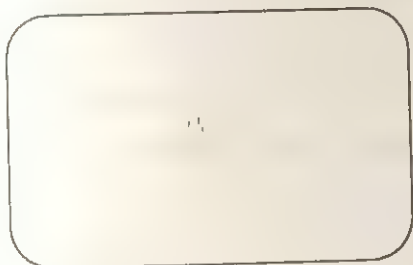
? HOME



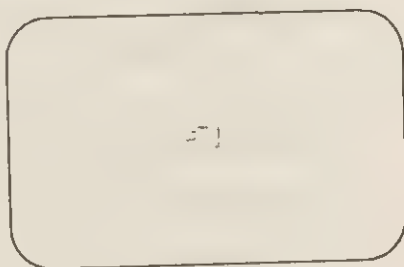
Try it yourself



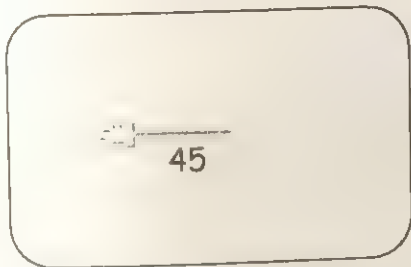
Write down the primitives in the blank lines given below each of the screens to draw a traingle.



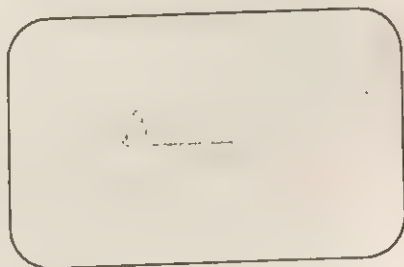
? _____



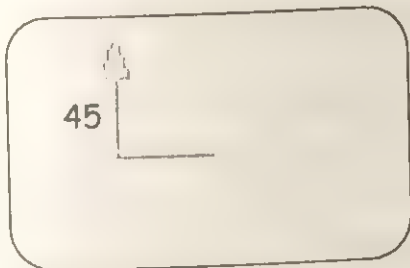
? _____



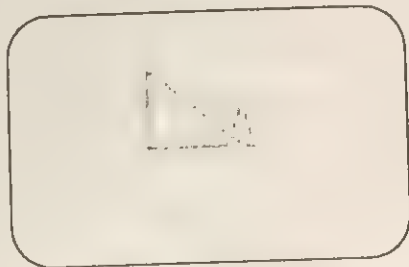
? _____



? _____



? _____

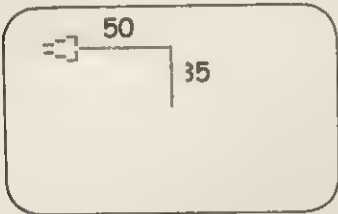


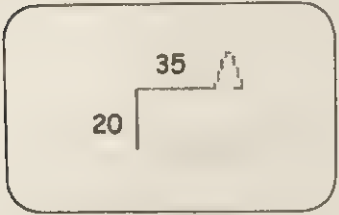
? _____

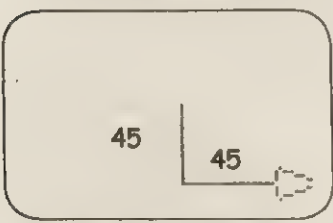


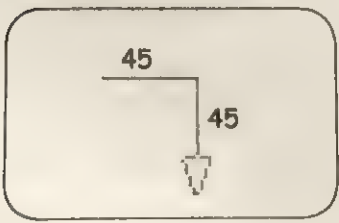
Try it yourself

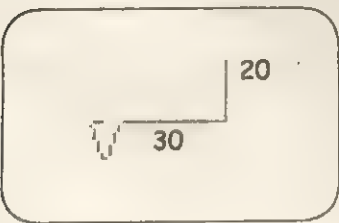
Write the commands for drawing the following figures.

a. 

b. 

c. 

d. 

e. 

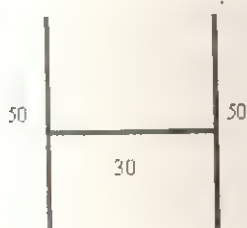


Try it yourself

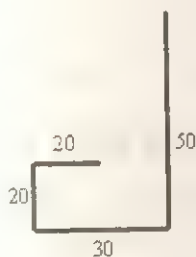


1) Write the commands on the adjacent space to obtain the figures given below.

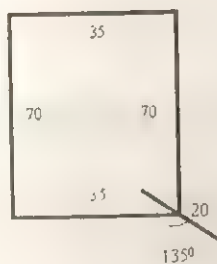
a.



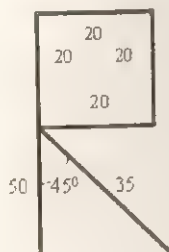
b.



c.



d.





6.18 Hiding the turtle and showing the turtle

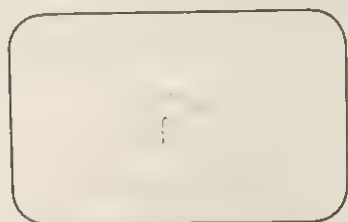
Whatever picture you have drawn till now, the Turtle has been always present on the screen.

We can make the **TURTLE** disappear and reappear from the screen at our wish by the use of certain commands which we will learn now:

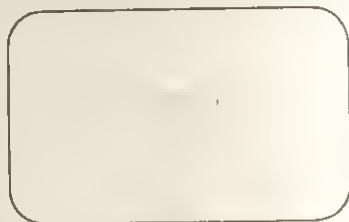
The Primitive **HT (HideTurtle)** makes the Turtle disappear from the screen.

The Primitive **ST (ShowTurtle)** makes the turtle reappear on the screen.

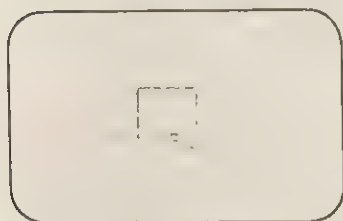
Watch the fun!



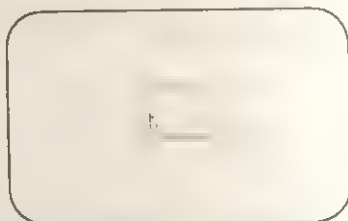
?FD 35 RT 90



?FD 35 RT 90

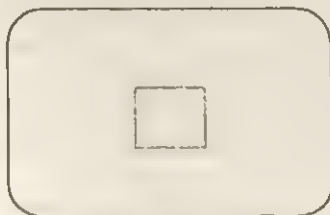


?FD 35 RT 90



?FD 35 RT 90

In all the above figures we find the turtle is always present on the screen; in fact after the square is drawn, the presence of the turtle does not allow us to get a neat picture. To get a neat output we can use the **HT** primitive which hides the turtle from the screen.

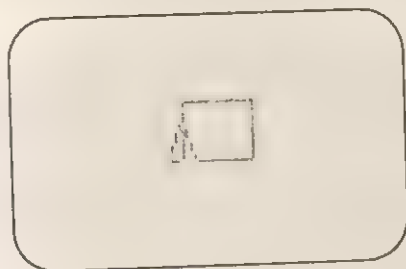


?HT

As soon as we typed the primitive HT the turtle disappeared from the screen.

Don't feel sad.

Just call the turtle back by typing the primitive ST.



? ST

Now go on having fun playing Hide & seek with the Turtle.

Remember :

HT is the short form of HIDE TURTLE

ST is the short form of SHOW TURTLE

6.19 More about DRAW

Till now you have been learning how to move the turtle Forward, Backward, Left and Right all over the screen.

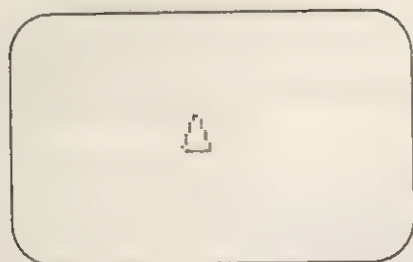
You must be waiting to see a clear screen displaying only the turtle but not any drawings.

Just type in :

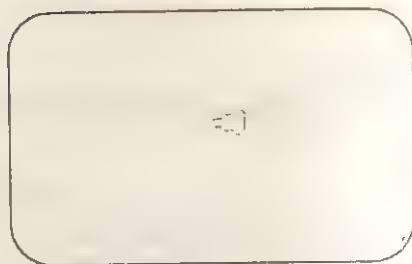
? DRAW

And that's all ! Everything vanished !

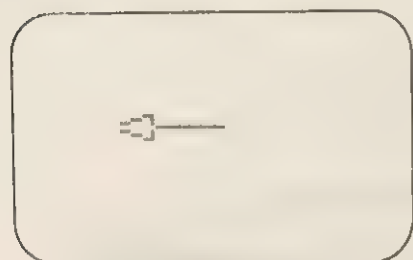
Again the Turtle is in the centre looking at the top of the screen. Just watch.



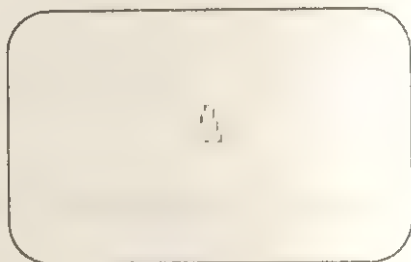
? DRAW



? LT 90



? FD 40



? DRAW

As soon as we type DRAW all the previous drawings made by of the Turtle gets cleared and the the turtle is found at the centre of the screen.

6.20 LOGO Screen:

We will now learn about the various screens available on the LOGO software by typing different primitives.

6.21 Text Screen

The primitive Text screen converts the entire screen to Text area and no drawings are displayed.

The short from of Text Screen is TS.

Instead of typing TS you can also press the function Key F3 button to get the same effect.

To understand Text Screen or TS let us see the two screens given below.

In a normal LOGO screen we can see both Graphics Screen and Text Screen as shown below.

?LT 90 FD 30
?RT 90 FD 30



?LT 90 FD 30
?RT 90 FD 30

i. Graphics screen shows the drawing made by the turtle.

ii. Text screen shows the primitives given to the turtle.

Figure displaying both the graphics screen and text screen

?DRAW
?FD 30
?RT 45

?BK 45
?RT 45
?FD 30
?LT 90
?FD 30
?RT 90
?FD 30
? TS

No Graphics are visible only Text Screen can be seen.

Figure showing only text screen after typing the TS primitive



6.22 Full Screen

To convert the entire screen to graphics screen we have to type FULL SCREEN or FS.

The short form of Full Screen is FS. To get the effect of Full screen the function key F4 may also be used instead of FS.

If we type ? FS only the graphics screen is displayed and no text is visible.

Let us understand the primitive FULL SCREEN with the help of an example. Let us make a drawing on the screen by typing the primitives on the text screen.

?FD 45 LT 90
?FD 30 RT 90

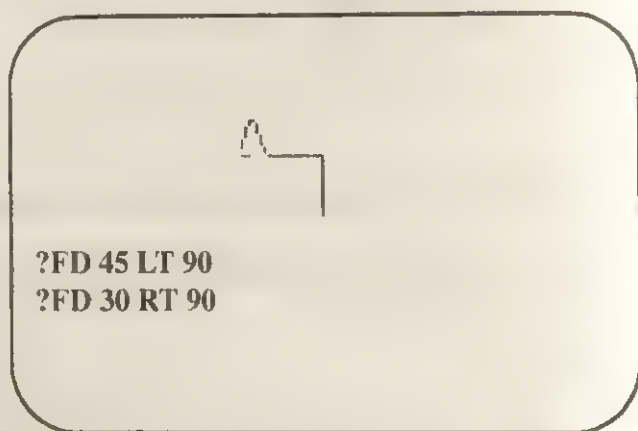


Figure displaying both the graphics Screen and text screen

Now if we type ? FS the screen will have only the graphics and no text.

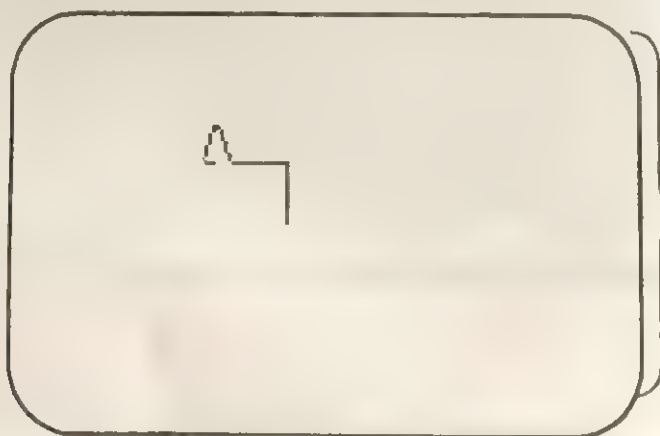


Figure showing only graphics Screen after typing FS primitive.

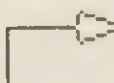
6.23 Difference between Clear Screen (CS) and DRAW

There are two commands in LOGO similar to each other. They are DRAW and Clear Screen or CS.

CS is the short form of Clear Screen.

Can you tell the difference between them?

Let us try to understand the primitive Clear Screen with the help of an example.



```
?FD 30
?RT 90 FD 40
```

```
?FD 30
```

```
?RT 90 FD 40
```

Now type the primitive CS and press the Enter key.


```
?CS
```

The screen will look like the adjacent figure. So, the CS command has cleared the screen. But you will notice that the turtle is at the middle of the screen with its head pointing upwards.

Now try the following commands on your computer.

```
?FD 40 RT 90
```

```
?FD 40 HT
```



```
?FD 30 RT 90
? FD 40 HT
```

Now once again type CS and press the Enter key.

The screen will be totally cleared and even the turtle will not be seen at the screen

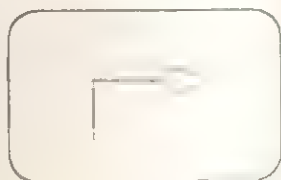
```
?FD 30 RT 90
? FD 40 HT
?CS
```



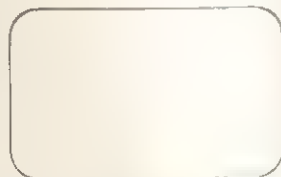
Like the previous example, in this case also CS has cleared the screen. But why is the turtle not present on the screen? It has gone away because we have hidden the turtle by typing HT before typing CS. So, the CS command clears the screen and brings the turtle to the middle of the screen if we haven't done HT before it. But if we hide the turtle before typing the CS command, the turtle remains hidden even after the CS command.

Now let us try to understand the difference between DRAW and CS. We will execute the previous example using DRAW primitive instead of CS primitive and find out what happens.

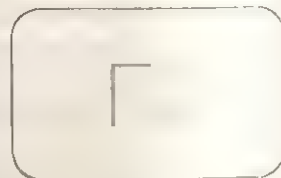
```
?FD 30  
?RT 90 FD 40
```



```
?DRAW  
Show the position of the turtle in the adjacent  
blank screen.
```



```
?FD 40 RT 90  
?FD 40 HT
```



```
?DRAW  
Show the position of the turtle in the adjacent  
blank screen.
```



The primitive DRAW clears the screen and brings back the turtle in the middle of the screen in all cases.

Even if the turtle is hidden due to HT command as soon as you type the primitive DRAW the turtle comes back to the centre.



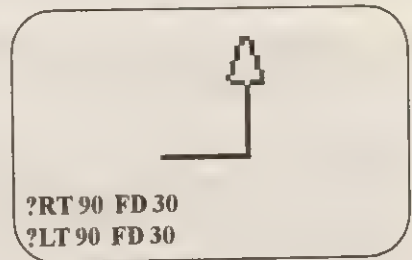


6.24 CLEAN

The CLEAN command erases the graphics screen but keeps the turtle in its last position.

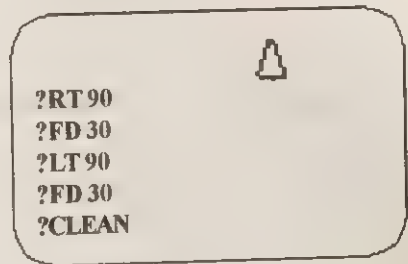
Let us see an example :

```
?RT 90 FD 30
?LT 90 FD 30
```



Now type
?CLEAN

We will see the only turtle remains at its last position but all the drawings have vanished; although all the texts remains as it is, in the text area.



6.25 Difference between the DRAW, CLEAN and HOME command.

The DRAW command erases all figures and brings back the turtle in its home that is the center of the screen.

The CLEAN command erases the figures but the turtle remains in its last position.

The HOME command does not erase any figure but simply brings the turtle in its home i.e the centre of the screen and while doing so it leaves a trail behind it.



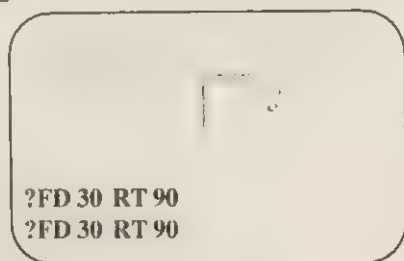
6.26 CLEARTEXT

We have seen that, we can type the primitives only at the lower portion of the screen known as Text Area. In case we do not want to see the text which is being displayed on the screen we use the primitive CLEARTEXT.

The CLEARTEXT primitive removes all the primitives from the the text area. The short form of CLEARTEXT is CT.

Let us see an example

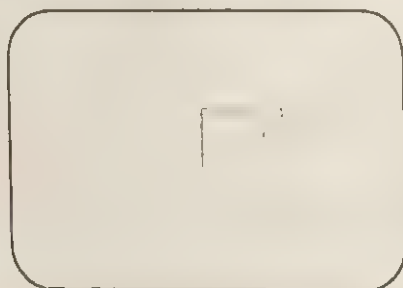
?FD 30 RT 90
?FD 30 RT 90



Before using CT command we can see all the commands on the screen.

Now if we type ? CT the entire text will disappear as given in the figure.

?CT



No command is displayed in the text area.

6.27 Learning the PENUP and PENDOWN movement of the turtle

Line AB given in the figure below is one continuous line.

A _____ B
FD 45

So far you have been drawing continuous lines by using the primitives "FD" and "BK"



but if you want to draw a discontinuous line as shown below, then you have to learn two primitives Pen Up or "PU" and Pen Down or "PD"



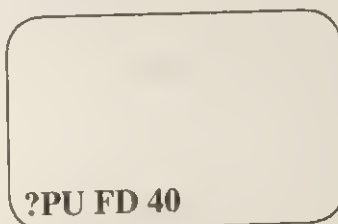
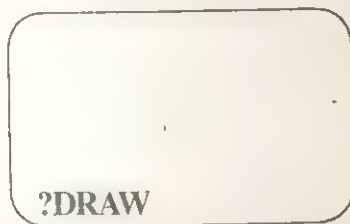
PU or PENUP

You all know that the turtle carries a pen under its base. so, the turtle draws a line on the screen as it moves. But if you give the command "PU", the turtle lifts up its pen and moves forward, backward, right or left on the screen without drawing any line.

Type :

?DRAW

?PU FD 40

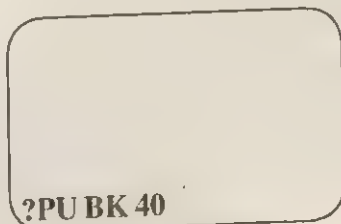
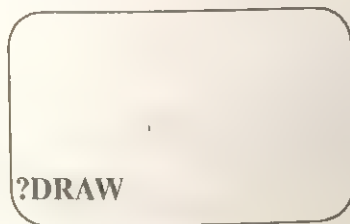


You will find that the turtle moves forward by 40 steps on the screen without drawing any line

Example 2 : Type :

?DRAW

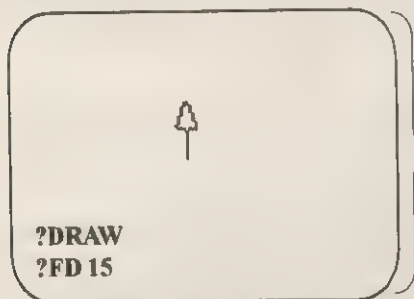
?PU BK 40



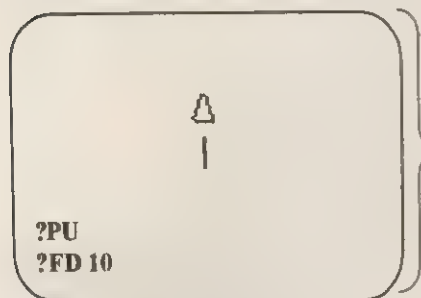
You will find that the turtle moves backward by 40 steps on the screen without drawing any line



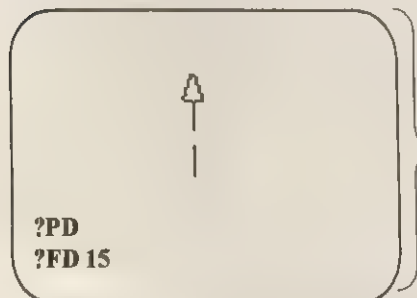
In this example we will try to understand how to draw discontinuous lines by putting up the pen and putting down the pen as the turtle remains on screen.



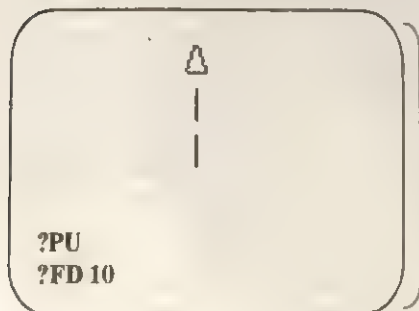
The Turtle moves by 15 steps in the forward direction.



The turtle lifts its pen due to the Pen Up (PU) primitive. It then moves forward by 10 steps without drawing any line as it moves. Thus, we see a gap of 10 turtle steps is created.



The turtle put downs its pen due to Pen Down primitive (PD). It then moves forward by 15 steps and draws a line as it moves.



The Turtle lifts its pen again due to Pen Up (PU) primitive and moves forward by 10 steps without drawing any line. Again a gap of 10 turtle steps is created.



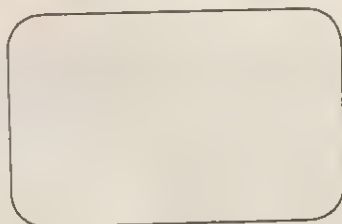
Try it yourself



Draw the movement of the turtle in the blank screen after executing it on the computer.

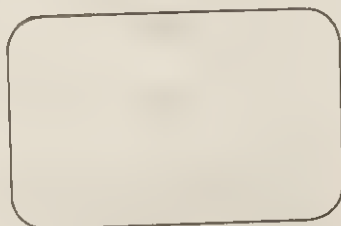
- a. ?PU
 ?FD 20
 ?RT 90
 ?PD
 ?FD 20

What happens?



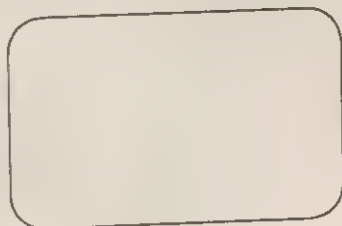
- b. ?FD 30
 ?RT 90
 ?PU
 ?FD 30
 ?RT 90
 ?PD
 ?FD 30
 ?RT 90
 ?PU
 ?FD 30

What happens?



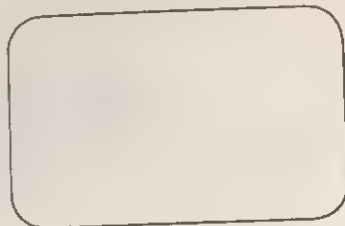
- c. ?RT 90
 ?FD 25
 ?PU
 ?FD 10
 ?PD
 ?FD 20

What happens?



- d. ?RT 90 FD 20 PU FD 5 LT 90 PD
 ?FD 20 RT 90 PU FD 5 PD FD 20
 ?PU FD 5 RT 90 PD FD 20 LT 90
 ?PU FD 5 PD FD 20

What happens?













CHAPTER-7

Starting with windows



We will learn about

-  Introduction to Windows
-  Desktop and Icon
-  The Task Bar and Start Button
-  Title Bar
-  Menu Bar
-  Scroll Bar
-  Control Buttons
-  Mouse operations in Windows
-  Changing the size of a Window
-  Moving around the Window desktop screen

7.1 Introduction to Windows

Windows is an operating system software or a program. It is a very special program which starts up a computer and helps us to work on other programs.

Once Windows operating systems is installed on the computer we can start many other different programs which are available on the computer and work on them.



Till a few years back people used DOS(Disk Operating System) as an operating system software to do similar jobs in place of Windows. But due to the user friendliness of Windows and the use of intense graphics, Windows has become very popular operating system.

7.2 What is Desktop?

In a computer having Windows operating system as soon as the computer start-up (booting) process is over the first screen that is displayed on the monitor is called the Desktop. One can move around the desktop using the mouse. We know that the mouse is a pointing device. Let us take the mouse pointer on any of the icons, let's say "My Computer" icon. Double click on the icon. Immediately a rectangular box appears on the screen which resembles a window. It is also called a Window. This window again may have more icons in it. If you click on any of these icons another window will appear. So in a Windows operating system, you will find windows within windows, where each of the windows represent a specific software.

What is Command?

A Command tells the computer, what the user wants, the computer to do.

What is an icon?

We will find that any Windows desktop is filled up with little labeled pictures known as Icons. These icons can be thought of as doorways, each of which leads to a particular program, folders or document. When we double click on any of the icons with our mouse the icon opens up into a rectangular frame called the Window.

The icons appear on the desktop when we start Windows. The icons provide quick access to the software that we use most often. There are different types of icons found in the Windows environment for e.g. Folder Icons, Shortcut Icons, Program Icons, Document Icons, Special Icons, etc. We will learn in details about these icons in our higher class.

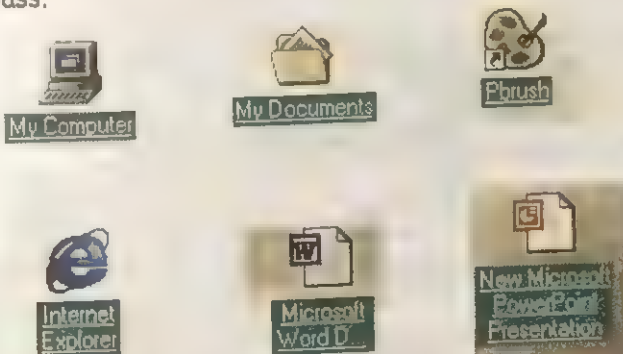


Figure displaying different types of Icons

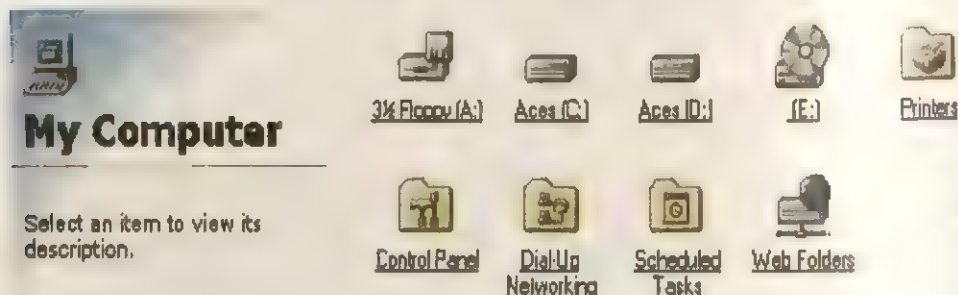
Let us find about the two most important icons found on the desktop.

MY COMPUTER :

This is an icon that we use as an alternative method of accessing the programs and files on the computer.

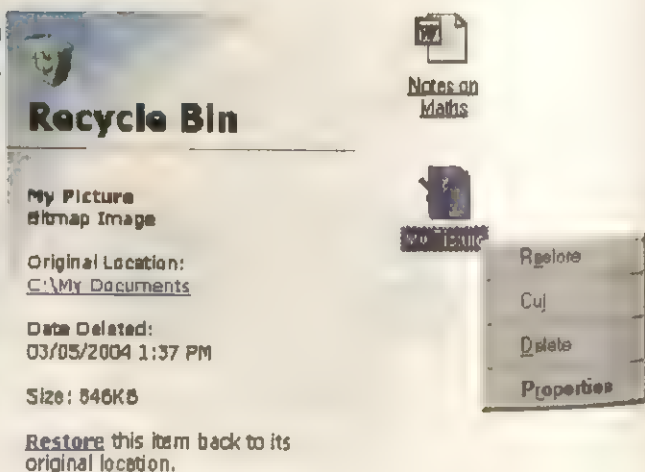
'My Computer' icon provides access to the different resources available with a computer. We can find out regarding the presence of floppy disk drive, CD Rom Drives, Hard Disk Drives, Web Camera, Modem etc. by clicking on this icon. We can also access the Control Panel through this icon.

[Teachers to show the students the contents of a Control Panel.]



Recycle Bin:

We all have waste paper bins in our study rooms. What do we do with it? Any piece of paper which are no more required are thrown into this waste paper bin. The person who cleans our room in the morning takes away all these papers and throws in the garbage vat of the colony. Thus in case if you throw a piece of paper which had some important school notes and



by mistake it goes in the bin, you can actually pick it up before the cleaner empties your study room. But, once it is thrown in the garbage dump you lose it forever.

The same holds true while working with files in a computer. When we want to delete a file, windows sends it to the "Recycle Bin". If we click on the icon of "Recycle Bin" it will display all files and programs that were deleted. We can permanently delete the objects present in the Recycle Bin or also restore (get back & save) them.

7.3 The Task bar and Start Button

The Task bar is located at the bottom of the screen and contains the Start button on its left most corner.



Figure of a Taskbar

By clicking on the Start button you can do various things some of which are mentioned below.

- Open a document
- Start a program
- Find out about location of files.
- Shut down a computer.



Figure of a Start Button

Each time we start a program a window opens and a button representing that program appears on the Task bar.

When we close a program the Window closes and immediately the button on the taskbar disappears.

By looking at the buttons displayed on the task bar we can say which programs are actually open.

On the top of the screen of all the windows we find a Title bar. The Title bar displays the name of the program which we are currently working on.

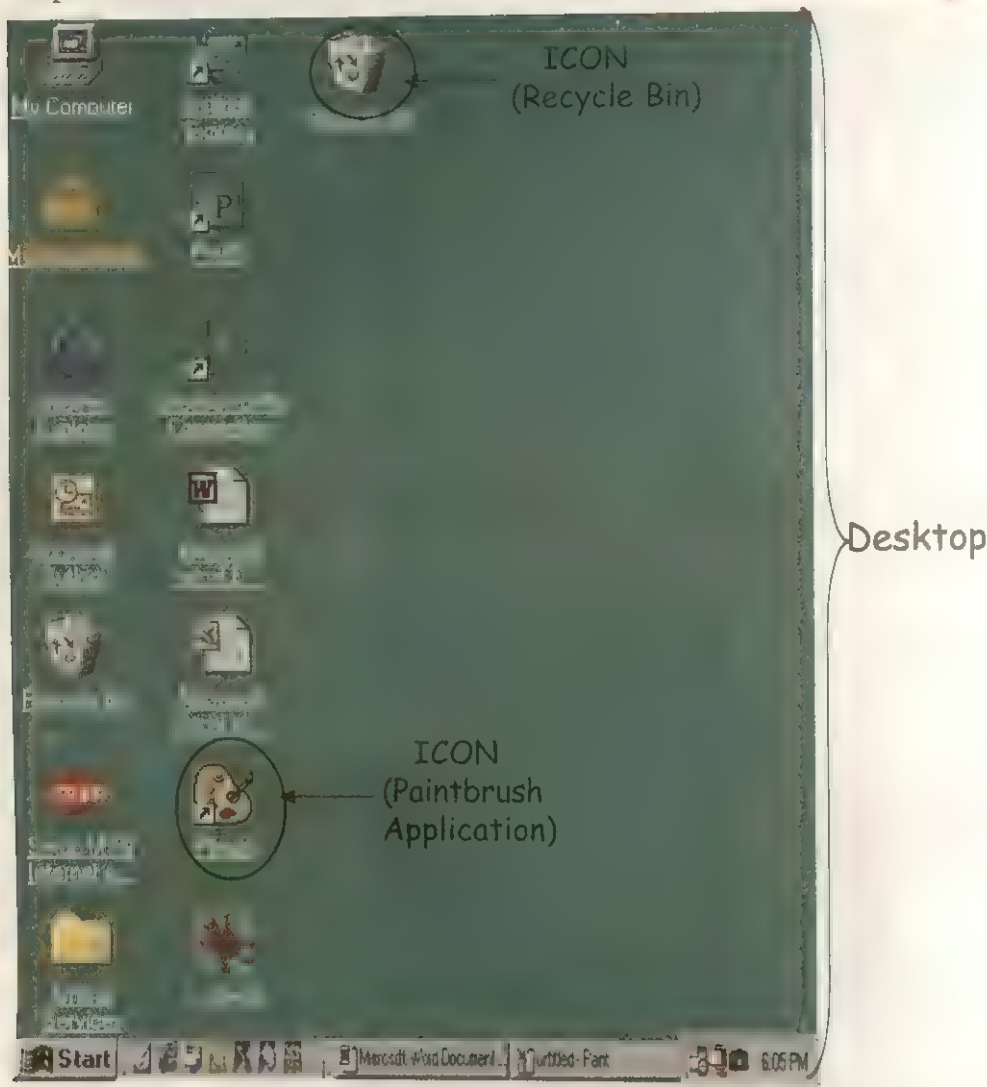



Figure of Desktop Screen

Try it your self 

How many icons you will find in your desktop?
One can move around the desktop using the mouse. We know that the mouse is a pointing device. We can display all our software programs stored in our computer on the Desktop in the form of icons.

click on the icon. Immediately a rectangular box appears on the screen which resembles a window. It is also called a Window. This window again may have more icons in it. If you click on any of these icons another window will appear.

So in a Windows operating system, you will find windows within windows, where each of the windows represent a specific software.

7.4 Title Bar

The Title Bar is located at the top of any window application and contains the name of the file which we are using. The file name displayed on the title bar may be given by the user while saving his work.

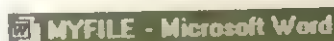


Figure shows Title Bar of Microsoft Word Application

7.5 Menu Bar

The Menu Bar is located below the Title Bar. It contains various menus. There are many options available with each menu. These options help us to do various modifications on the file of the current window application.

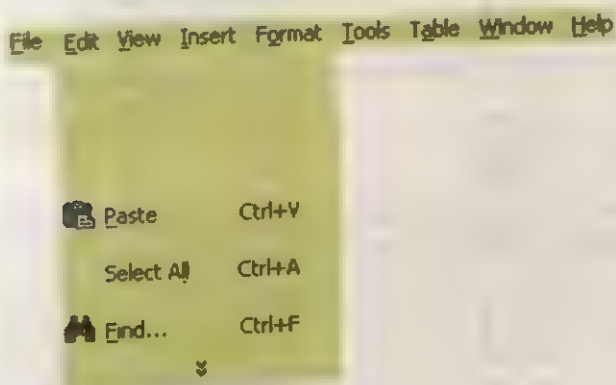


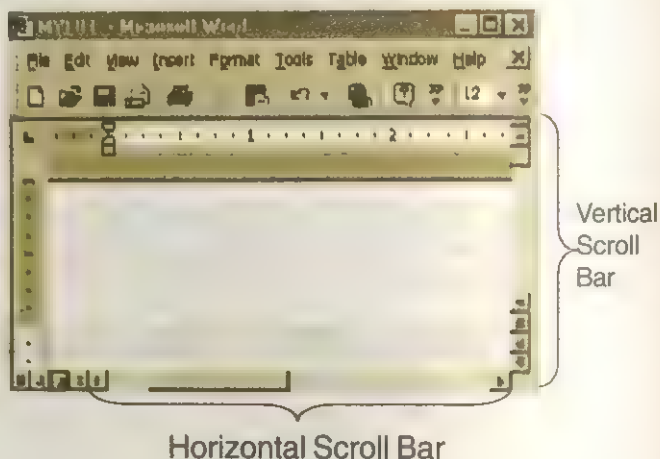
Figure shows Menu bar of Microsoft Word Application

7.5 Scroll Bar

There are two scroll bars in any window application

- i) Horizontal scroll bar
- ii) Vertical scroll bar

The horizontal scroll bar is located at the bottom of the window and is used to scroll from left to right or vice versa on the screen. The vertical scroll bar is used to scroll the screen from top to bottom and vice versa.



7.6 Control Buttons

On the top right most corner of every window we find three buttons side by side. These three buttons together are called Control Buttons.



Close Button



To come out from any window application click on the close button in the upper right corner.

Maximise button



Next to the close button we find maximise button.

Clicking the maximise button increases the size of the window to cover the entire screen.

Minimise button



Next to the maximise button we find the minimise button.

Clicking the minimise button reduces the window to a tiny button on the taskbar.

7.7 Mouse Operations in Windows

We will find that the user can primarily perform two types of activities with the help of a mouse:

- i) Click
- ii) Drag and Drop

What is clicking?

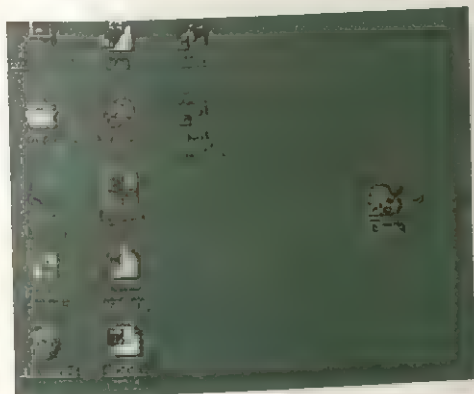
The activities of pressing and immediately releasing the mouse button can be termed as clicking. By clicking the mouse we can select a program, run a program, open a menu, etc.

What is dragging?

We have to first point to an icon in desktop representing any software program. While pressing and holding down the mouse button we can drag the icon to a new location. This process is called "Drag and Drop".



The initial Position of the pbrush Icon before dragging.



The Final Position of the pbrush Icon before dragging.



7.8 Changing the size of a window

We can also change the size and position of a window.

When we open several windows at the same time, we can change their position so that they don't overlap with each other leading to a confusion.

How do you change the size of a window

If we move the mouse pointer to the window border, the pointer takes various shapes viz.

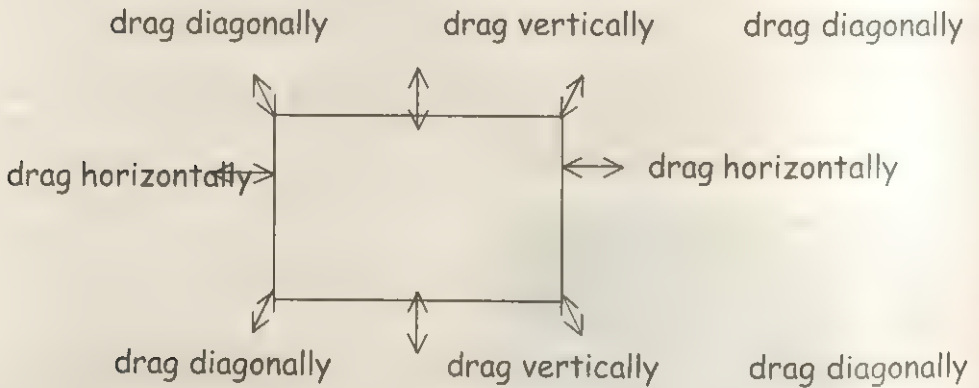


Figure showing pointers for dragging a window in different directions.

We have to drag the border while keeping the left mouse button pressed. By dragging we can enlarge, reduce or even change the shape of a window.










Let us try modifying the window size by dragging the top, bottom, side and border and the corners. We will find that the shape of the pointer is changing in each case. We will also find that the window shape changes in a different manner depending the way we drag it.

CHAPTER 8

My Paint Program



We will learn about

-  Starting the Paint Program
-  Drawing Area
-  Tool Box
-  Colour Palette
-  Working with different tools.
-  Making a drawing
-  Changing colours
-  Removing unwanted colour
-  Printing a drawing

8 1 Starting the Paint program

We will learn a very easy way to make interesting and colourful drawings, paintings, patterns with the help of a program known as "Paint".

The "Paint" software is available in the "Accessories" folder of the computer.

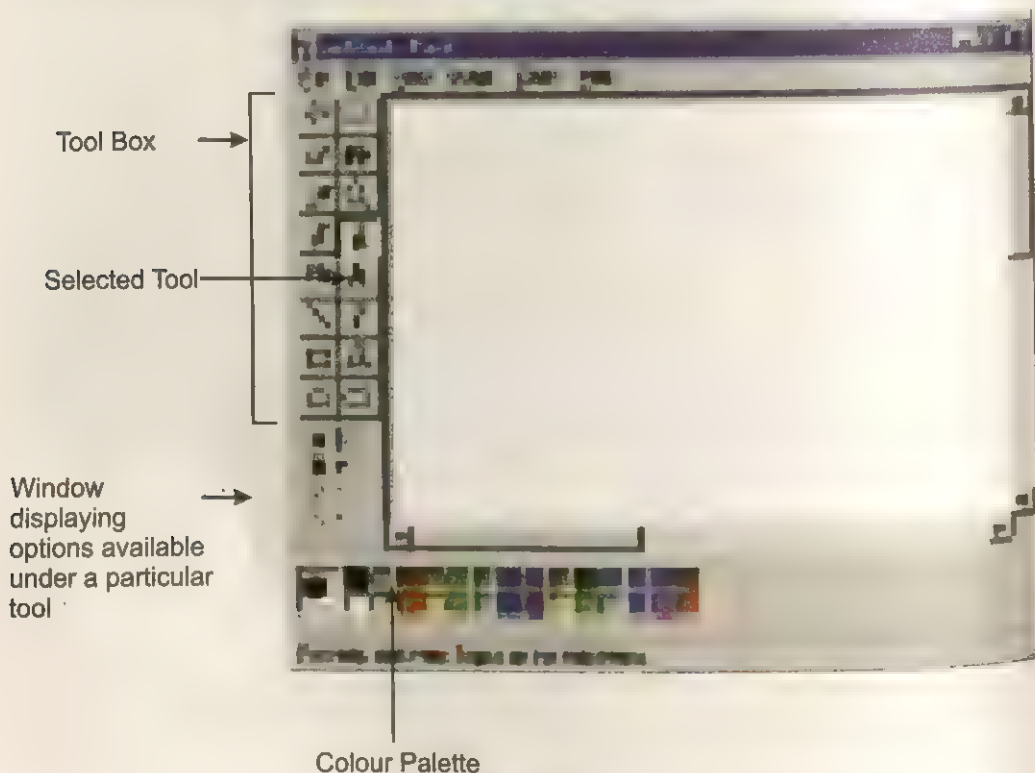
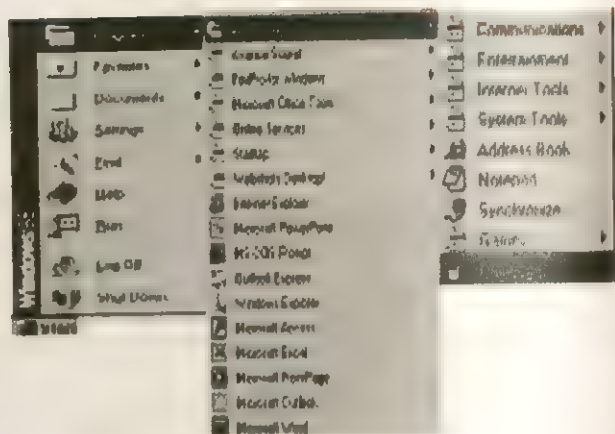
To start working on Paint we have to follow the given procedure:

- Go to the Start Button
- Select Programs.
- Select Accessories.
- Click on the Paint icon.

The Paint window appears on the screen.

Click on the "Maximise" button to increase the size of the window to cover the entire monitor screen.

Let us look at the initial screen of the Paint program carefully



There are three major constituent of the paint screen (as given in the figure).

i. Drawing Area ii. Tool Box. iii. Colour Palette

We will learn about these three constituents in details in this class.

8.2 Drawing Area :

The central white portion of the screen is where we can draw pictures. This is known as the Drawing Area or the Drawing Board.

8.3 Tool Box

Where do we find the Tool Box ?

Along the left side adjacent to the drawing area you will find rows of small boxes placed vertically from top to bottom containing pictures of various painting and drawing tools. These tools are used to draw, paint and create different shapes. Below the tool box there is a window which shows the different options available with a particular tool for eg. while drawing a line the window displays various thickness of the line you may want to choose.

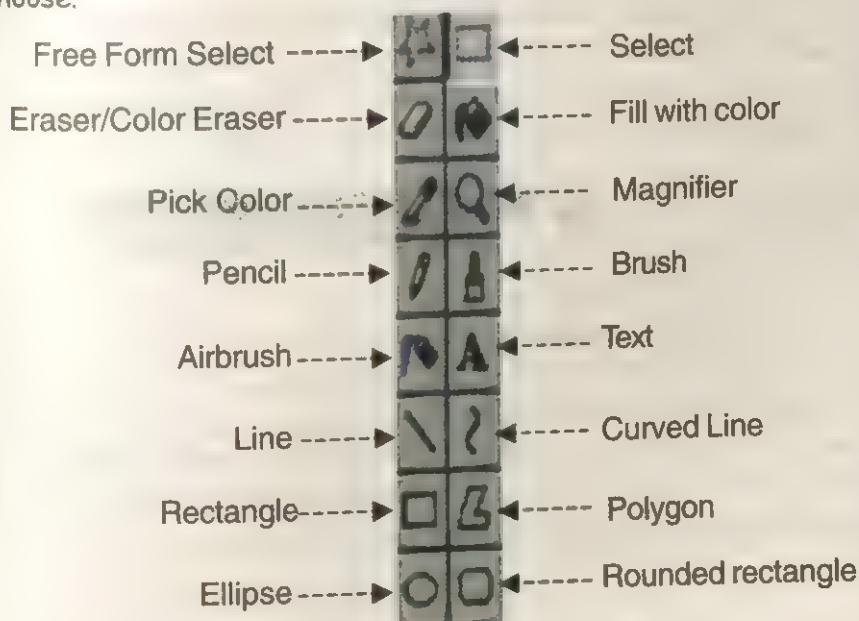


Figure of the Tool box






How to select a Tool


In order to select a tool, we move the mouse pointer to the particular tool in the Tool box and click on the left button of the mouse once.

After clicking on each box of the tool box, move the mouse pointer on the drawing area. If you notice carefully you will find the size and shape of the cursor may change depending upon the type of tool selected.

We will see some examples :

 is the tool representing a pencil. When it is selected and dragged on the drawing area, it remains unchanged and still looks like a  on the drawing area.

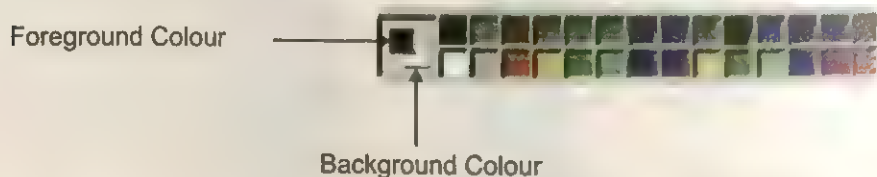
 is the tool for erasing; when the eraser tool is selected and moves on the drawing area the cursor changes to the shape of a rectangle as shown.

 is the tool for drawing a line. When the line tool is selected and the mouse pointer moved on the drawing area the cursor takes to the shape of a cross as shown.

8.4 Colour Palette

At the bottom of the drawing area you will find a row of small boxes containing a particular colour in each of the boxes. This is known as the Colour Palette.

By clicking on any of the colour you can select that particular colour. A particular is used on the drawing area with the help of a particular tool.



8.5 Working with different tools of the Tool Box.

Let us find out in a simple way how each of the tools can be used to make a good painting. In this class we will teach in details about few of these tools. As you go up in your higher classes you will be taught about all the tools.

Free Form Select Tool

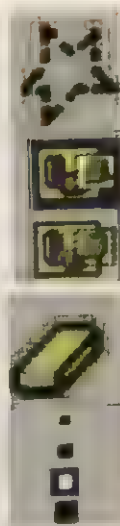
With the help of this tool we can select the way you want to cut an object or portion of an object.

Erase tool

Just the way we can remove a mistake on our drawing book with the help of an eraser, similarly in paint software eraser tool is used to erase the mistakes we make, while drawing.

When we move this tool on the drawing it erases that part of drawing on which it moves. We select a bigger or smaller size of an eraser depending on the area of drawing to be erased.

While the eraser tool is selected a window opens below the tool box displaying various size of eraser.



Pick Tool

This tool is used to select a specific colour from a picture and then use it in another area. We do not need to select the colour from the colour palette.



Pencil Tool

We use the pencil tool to make free hand drawings; This is very similar to the way we draw on our sketch book with pencil. Click on this tool and then start drawing on the drawing area; (if you make a mistake you can use the eraser tool about which you have just learnt.)



Air Brush Tool

To understand the airbrush tool, take a tooth brush, dip it in a plate of paint and spray it with the help of your thumb on a piece of paper. You will find dots of paint sprayed on the paper.

The Air brush tool is used to spray colours of our choice in shapes of dots on your picture.





Line Tool

This tool is used to draw straight lines in the drawing area.

How to use this tool.

Click on the line tool. You will find lines of different thickness displayed in the window below the tool box. Select any one of them as per your requirement.

Drag the Line Tool on the drawing area.

Click on a point say A as the starting point and then drag the line to the size you want to. Click again to finish the drawing. You will notice that the line which is drawn appears broken. If you press 'SHIFT' key pressing while drawing the line, the line formed will be continuous in nature.

We can choose the thickness of the line from the options available in window which is displayed in selecting the line tool.

Rectangle Tool

This tool is used to draw rectangles or squares.

How to use this tool?

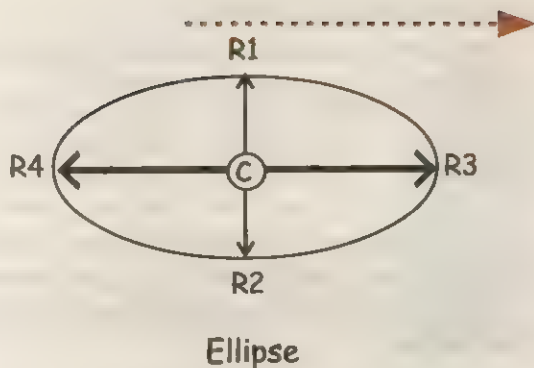
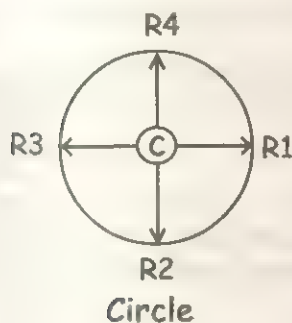
Click on this tool to select it and drag on the drawing area.

Click on any part of the drawing area. This first point selected makes one corner of the rectangle. Drag the pointer on the opposite side. After deciding on the size of the rectangle click for the second time. Oh!! The Rectangle has been drawn having a size of your choice. In case you want to draw a square keep the "SHIFT" key pressed while you move on the drawing area after selecting the rectangle tool. A square shape will be created instead of a rectangle.

This tool is used to draw circles & ellipses.

(Just remember that in a circle the distance of the boundary from the center is same, whereas in ellipse the distance of the boundary from the center is not the same everywhere.





Let us assume , C = Center of the Circle / Ellipse

In case of circle $CR_1 = CR_2 = CR_3 = CR_4$ but,

In case of Ellipse $CR_1 = CR_2$ Again $CR_3 = CR_4$

Select Tool

This tool is used to select a rectangular portion from a picture for necessary modifications. Modification implies addition or deletion of a picture or part of a picture.



Fill with Colour Tool

This tool is used to fill up a drawing with different colours available on the colour palette.

We have to first choose the colour from the colour palette and then drag the tool to the space to be filled with the colour and then click on it. Yeah! it is painted. The only thing we must remember that the space to be coloured has to be closed on all sides.



(In case we want to colour the drawing area with any colour ;select the colour click on Fill with colour tool and click on the drawing area; you will see a magic - your drawing area is filled up with a different colour.



Magnifier Tool

By using this tool we can see an enlarged picture of any part of a drawing. When we click on this tool and drag it on a part of our drawing we find an enlarged size of that portion of our drawing.

Magnifier tool is used primarily to make corrections on a large scale which is difficult in a small scale drawing.

Brush tool

This tool can be used like a painting brush. We can make paintings with the help of this tool. We can also change the shape and thickness of the brush tips whenever required and select different colours from colour palette to make our painting look interesting.



The different shapes of brush tips available are as follows :

Rounded →

Inclined on the right →

Rectangle →

Inclined on the left →

Text Tool

With the help of this tool we can type text in the drawing area. For eg. We can give a caption to a drawing , write a message along with a picture, label a picture etc. with the help of this tool.



How to use this tool ?

- Click on the Text Tool.
- Click on the drawing area.
- A rectangular box is formed.
- Type any text of your choice.

Curve Tool

This tool is used to draw curved lines.

How to use this tool ?

Click on this tool and at first draw a straight line. Click twice on the outer side of this line. You will find a curve line has been formed.



Polygon Tool

This tool is used to draw polygons like triangle, rectangle, square, Pentagon, Hexagon , Septagon etc. in the drawing area.



Rounded Rectangle

This tool is used to draw rectangles and squares having rounded off edges. (In conventional rectangle and squares the edges are sharp and have a 90° angle.)



8.6 How do we start making a drawing.

Let us start by drawing the middle portion of the flower, as given in the figure, which is in this case circular in shape.

Take the mouse pointer to the colour palette and select the colour red.



☺ Go to the Tool Box and select the ellipse tool.

☹ Take the pointer to the drawing area. The Cursor changes to sign. +

Pressing the shift key drag the ellipse tool to obtain a circle of desired size. |

Drag the mouse pointer till the desired size is achieved.

To fill up the circle as given in the figure we have to spray colors inside it. We can take the help of Air Brush Tool to get the effect.

☹ Go to the Tool Box and select the Air Brush Tool.



You will find different size of the airbrush tip appears in a window placed at the bottom of the Tool Box.

☺ Select the size of your choice. Say, select the smallest spraytip size (highlighted). Take the mouse pointer on the circle. Click the mouse continuously till the the desired effect is acheived. (as shown).



Next we will draw the outline of the petals of the flower. We can draw the petals with the help of Brush tool.

☺ Go to the Tool Box and select Brush tool.

You will find a window displayed at the bottom of the tool box consisting of different shapes and sizes of the brush tip.

☺ Choose the rounded tip (highlighted) of the brush from the window

☺ Take the pointer to the drawing area. The cursor changes to + sign. Then draw the petals as shown in the figure.



Similarly, with the help of Brush tool we will draw the outline of the leaves and the stem (from colour pallette we will select green colour for drawing the leaves and select brown color for drawing the stem) as shown in the figure.

[While working on the drawing area we will notice that if the pointer is moved without pressing the mouse button nothing is drawn on the screen]



8.7 How to erase a mistake on the drawing ?

Say, we have made a mistake while drawing the leaf. What do we do?

Let us assume, while making the boundary of the leaf the line becomes longer than the required size. There is nothing to worry. We can erase any portion of the drawing by using the eraser tool.



Portion

to be erased

We have to select the eraser tool and place it on the line to be erased. We have to keep the left button pressed and move the pointer over the unwanted line.

We have to release the button when we want to stop erasing.



Unwanted line has been erased

Now, we have to fill the petals and leaves of the flower with appropriate color.

This can be done by "Fill with color" tool. 

Let us first fill petals of the flower.

Go to the Tool Box and select "Fill with color" tool.



Select yellow color from the color palette. Take the mouse pointer on each petal. Click the mouse once. You will find the petals are filled with the yellow color.

Similarly, you can fill the each leaf with green shade with the help of "Fill with color" tool to get the desired picture.

8.8 Changing colours

After we have painted the leaves with a particular shade of green; we may not feel happy with the specific green shade of the leaves. Later we may want to change it to a different shade of green.

How do we do it?

- ① Select the new colour from colour palette and select the "Fill with colour" tool.

☺ Move the pointer to any part of each of the leaves and click; the existing colour changes to the new colour instantly.



Existing colour



New colour

While working with Fill with colour tool we may come across a typical problem.

In case the object to be filled up with a colour, is not bound on all its sides and a gap is left somewhere, the colour spills on the entire page.

Say, by mistake, a gap remains while drawing the outline of the leaf and we try to fill the leaf with a particular color. We will find the selected color spills on the entire page. We then have to first remove the colour, remove the gap existing on the outline of the leaf and fill up with colour again.

8.9 How do we remove the unwanted colour

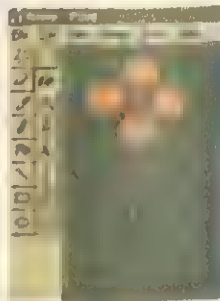
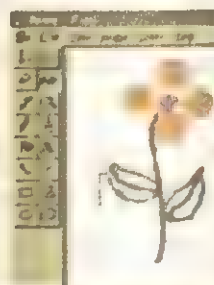
We have to cancel the previous command.

How to cancel a command which has been already executed ?

- ☺ Click on Edit Menu.
- ☺ Select the Undo option.

This will cancel your last command thereby removing the last changes you made on your drawing.

Now we need to remove the gap of the leaf by joining



This will cancel your last command thereby removing the last changes you made on your drawing.

Now we need to remove the gap of the leaf by joining on all sides with the help of brush tool and fill it up.

8.10 Printing a painting or drawing.

Put on the printer and ensure it has necessary papers for printing. (It should be noted to make color printing a deskjet printer is required.)

Select Print from File Menu.

Print window appears as given in the figure.

We have to insert the following information :

- Type of Printer being used

(The name and model of the printer is already stored in your Hard Disk Drive.

You just have to select it.)

- Number of copies to be printed.

- Exact page number or numbers to be printed etc.

After you click on Print or OK depending on the software you are using. You will get a color print of your drawing.

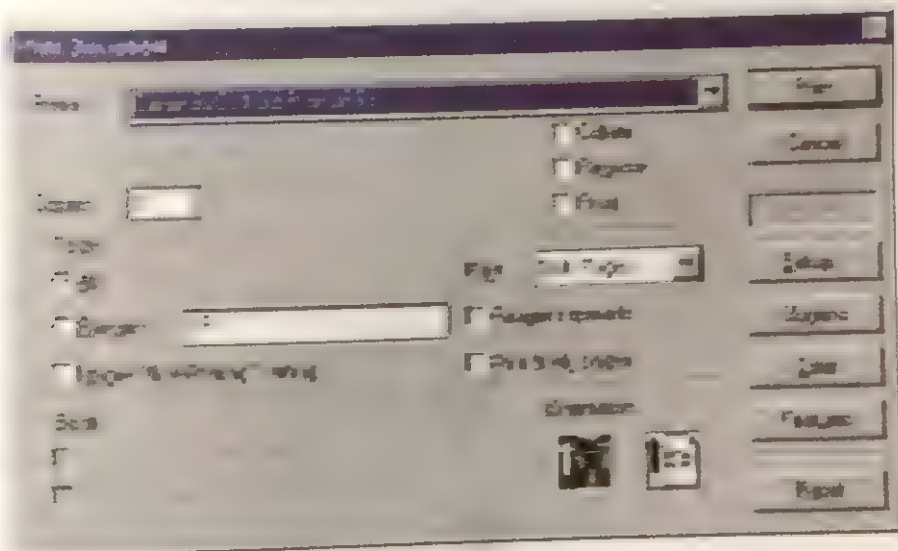


Figure of Print Window

Chapter 9

Learn about worksheet



We will learn about



Row and Columns



Worksheet



Cell Address

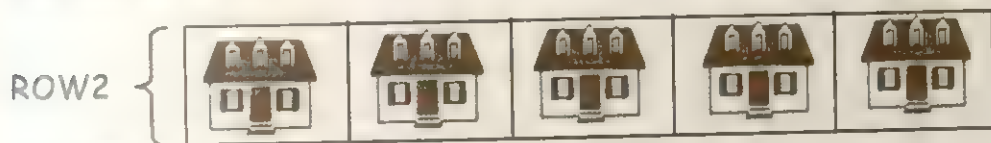


9.1 Understanding Rows and Columns

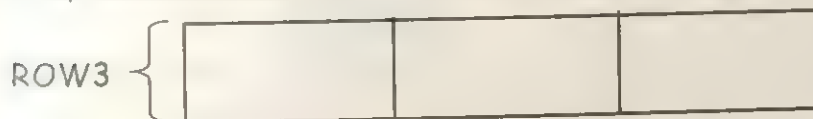
A worksheet is used for working on data. A worksheet has rows and columns. Rows go across horizontally from left to right. Let us see some examples of different rows.



We have filled up each of the boxes of Row2 with the picture of a house.



Fill up the three boxes of Row 3 with the picture of any tree.



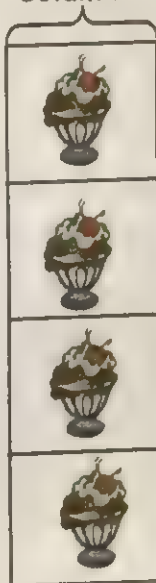
Columns go from top to bottom as in the figure below. See examples below of columns.

Column A



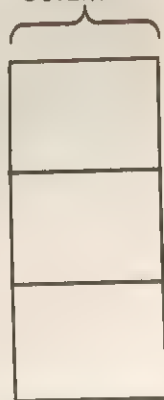
We have filled up each of the boxes of Column B with the picture of an Icecream.

Column B



Fill up the three boxes of Column C with picture of a Football.

Column C



9.2 Understanding Worksheet

When we put the rows and columns together a grid is formed.

The worksheet below is a grid.

	Column A	Column B	Column C	Column D
ROW1				
ROW2				
ROW3			Cell 1	
ROW4				

The boxes in a grid are called cells. We will notice each cell belongs to a particular row and a particular column.

Try it yourself

How many columns do you have in the worksheet 1?

How many rows do you have in the worksheet 1?

How many cells do you find in the worksheet 1?

We can also do calculations in the worksheet by putting some data.

Worksheet 2

Red Pencils	4
Blue Pencils	3
Green Pencils	2
Yellow Pencils	2
Total	

Add up the total number of pencils and put the answer in the spreadsheet.



Try it yourself



How many rows are there in this worksheet ?

How many columns are there in this worksheet ?

Spreadsheet can be very big; they can have 50 columns and 50 rows, even 75 columns and 100 rows, or even more.

In big computer spreadsheet counting of columns and rows becomes very easy because the software tells you how big the spreadsheet is. All columns are numbered by a letter. The first column is column A. The second column is B. The third column is C and so on. Whereas all rows are numbered. The numbers are in sequential ordered. i.e.

The first column is

Column A

The first row is

Row 1

The second column is

Column B

The second row is

Row 2

The third column is

Column C

The third row is

Row 3

Try it yourself



The fourth column is

Column

The fourth row is

Row

The fifth column is

Column

The fifth row is

Row

Similarly each cell is numbered, sequentially. Cell Address tells where each cell is in the worksheet. First you find out in which column the cell is located and then the row number.

Try it yourself



Put the names of the column starting from A,B, and so on. Put the numbers of the rows starting from 1,2,3 and so on

The first column name (letter) and first row name (number) is filled up to help you understand the problem.

	A								Sum
1	25	32	39	46	53	60	67	74	
	30	39	48	57	66	75	84	93	
	35	46	57	68	79	90	57	39	
	40	65	59	77	88	99	55	9	
	45	11	5	12	31	41	51	91	
Sum									

Try it yourself



1. Add all the numbers in Row1, Row2, Row3, Row4 and Row5 and write the sum of respective row in the boxes located at the end of each Row.

2. Add all the numbers in ColumnA, ColumnB, ColumnC, ColumnD, ColumnE, ColumnF, ColumnG and ColumnH and write the sum of respective column in the boxes located at the end of each column.

9.3 Understanding Cell Address

What is Anita's address?

Anita lives in house no. C of Lane 3. So to find out Anita's house we will first enter lane no. 3 and then find house C.

How do we find things in a worksheet?

LANE 1	A Debasish	B Kamal	C Asish	D Kamalesh	E Rajib
LANE 2	A Saurav	B Debanik	C Soumen	D Rajesh	E Atindra
LANE 3	A Shakti	B Subhashish	C Anita	D Guddu	E Aninda
LANE 4	A Papai	B Soma	C Kuntal	D Ankita	E Goutam
LANE 5	A Kajal	B Mira	C Partha	D Kumresh	E Sudipta

Just the way we have an address; every cell has an address.

The address of a cell is known as the cell address.

The cell address tells you where each cell is located in a worksheet.

The Cell Address is made up of Column Letter followed by Row Number.

For example,

CELL ADDRESS: A2 implies → Column A Row 2

CELL ADDRESS: D5 implies → Column D Row 5

The Computer worksheet below shows the cell address of each of the cells.

	A	B	C	D	E
1	A1	B1	C1	D1	E1
2	A2	B2	C2	D2	E2
3	A3	B3	C3	D3	E3
4	A4	B4	C4	D4	E4
5	A5	B5	C5	D5	E5
6	A6	B6	C6	D6	E6






Try it yourself

Fill up the cell address in the worksheet given below in the same way as shown in the above example i.e. column name followed by Row number. One is done for you.

	F	G	H	I	J
7	F7				
8					
9					
10					
11					
12					
13					

Try it yourself



	A	B	C	D	E
1					
2					
3					
4					
5					
6					

- The Cell Address of the Monkey is
- The Cell Address of the Duck is
- The Cell Address of the Butterfly is
- The Cell Address of the Dog is
- The Cell Address of the horse is
- The Cell Address of the Lion is
- The Cell Address of the Zebra is
- The Cell Address of the Elephant is
- The Cell Address of the Fish is
- The Cell Address of the Mouse is
- The Cell Address of the Tiger is
- The Cell Address of the Frog is

A	1





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